The Journal of Obstetrics and Gynæcology of the British Empire

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Editorial.

THIS year sees the commencement of a new departure in the work of the JOURNAL in that arrangements have been made with the North of England Obstetrical and Gynæcological Society and with the newly formed Midland and West of England Gynæcological and Obstetrical Society by which the JOURNAL will report their meetings and publish their more important papers and communications. This arrangement ought to prove mutually advantageous. The JOURNAL will become the medium of publication for many valuable papers, which the authors may wish to have discussed in the first instance by their fellow members in these Societies, and its usefulness will be thereby greatly increased. At the same time the members of these Societies obtain a wider publicity for their work. Many valuable papers which are buried in Transactions and Journals with a local circulation only will now be easily available on the shelves of the teachers and workers in Obstetrics and Gynæcology, whilst by obtaining reprints from the printers of the JOURNAL and having these specially paged and bound, the Society can preserve its own Transactions for distribution among its members.

The Editorial Committee hopes by an extension of this system ultimately to make the JOURNAL a centre for the publication of the important original papers which have been read and discussed in British Obstetrical and Gynæcological Societies and not published elsewhere.

In order that the Societies and the Editorial Committee may be kept in touch with one another, these Societies will elect members to the Committee and arrangements are in view by which its meetings will be held not only in London but also in some of the important provincial centres where these Societies meet.

Another matter which has received the attention of the Committee is that of attracting more help from our colleagues in the oversea dominions. The title of the JOURNAL indicates that it is intended to serve the British Empire, but the contributions from outside the British Isles have scarcely been sufficient to warrant the full title. Arrangements are now in progress for the formation of

small sub-committees in Canada and Australia to watch over the interests of the JOURNAL in these parts and collect material and advise the main Editorial Committee.

The Committee has also had under consideration a change in the size and shape of the JOURNAL to make it correspond with what is known as the "International size" for the sake of uniformity in binding and ease of classification of reprints. The Committee, however, found that the increased cost which this change would entail scarcely justified the change at present, but it is prepared to reconsider the matter if this size should become more generally adopted. In the meantime it has arranged with the printers that reprints with a wide margin on pages of "International" size will be supplied to those authors who wish them. If the demand for reprints of this size becomes widespread, it will be the best possible evidence of the advisability of a change in size of the JOURNAL.

An Index to the second ten volumes of the JOURNAL is being compiled by Dr. Alice Ker, of Birkenhead, and will be published in the course of a few months. The Committee hopes that all subscribers to the JOURNAL will subscribe also for it. The expense of preparation and publication is considerable and unless there is a response sufficient to meet the cost of production it will not be possible to continue the issue of these ten-volume indexes. The previous index proved of great value for reference purposes and there is no question but that others will be of equal service.

In conclusion the Editors would call attention to the marked differences in the amount of material offered for publication from different quarters and different schools. In London, from some hospitals and schools, there is a fairly regular flow of contributions, from others there is scarcely such a thing as even a short clinical report. From some provincial centres, also, papers frequently reach the Editors, from others they are so rare and infrequent as to be negligible. As the Editors and Editorial Committee are striving to make the JOURNAL a central clearing house for the publication of the most important scientific and clinical work in Obstetrics and Gynæcology in these islands and in Great Britain, they would ask the help of the teachers and workers in all the large centres and in all medical schools.

Burton ("Dr. Slop"): His Forceps and His Foes.

By Alban Doran, F.R.C.S.

Part I.

Introduction.

"Of all men in the world, Dr. Slop was the fittest for my father's purpose;—for though his newly invented forceps was the armour he had proved, and what he maintained to be the safest instrument of deliverance,—yet it seems he had scattered a word or two in his book, in favour of the very thing which ran in my father's fancy;—though not with a view to the soul's good, in extracting by the feet, as was my father's system,—but for reasons merely obstetrical."

Tristram Shandy, Bk. II, Chap. xix.

This contribution is based on the above words, "newly invented forceps," for the name of Dr. Slop, in other words Dr. Burton, has always been associated with his forceps. We shall see presently that in practice he made use of another instrument, possibly also of his own contriving. Tristram Shandy's father, that is to say, Laurence Sterne, studied current works on Obstetrics, as will presently be explained. He was more correct than Gloucester, that is to say, Shakespeare:—

> "For I have often heard my mother say,
> I came into the world with *my legs forward*;
> Had I had not reason, think ye, *to make haste*,
> And seek their ruin that usurp'd our right?"
>
> 3 *Hen.* VI, v. 6.

Sterne makes no allusion to spontaneous footling delivery, though Dr. Slop speaks of breech presentation elsewhere.[1] In the sentence quoted above he refers to podalic version. His allusion to "extracting by the feet" was made not long after the days when De la Motte practised version freely and successfully.[2] Gloucester, on the other

1. *Tristram Shandy*, Bk. III, Chap. xvii.

2. "Podalic version was his Alpha and Omega, and in that operation he certainly attained a skill which has perhaps never been reached by anyone before or after him." Ingerslev, *loc. cit.*, p. 32. Tristram was supposed to have been born in 1718, when De la Motte was flourishing, but long before Burton invented his forceps.

hand, was wrong in believing that a footling presentation meant a speedy spontaneous delivery, and there was a far better uncle than Richard III in the Shandy family. Hence in obstetrical knowledge Sterne was superior to Shakespeare, and we all prefer Uncle Toby to "great York's heir." Tristram's father wished that his son should be delivered by Cæsarean section, so that no part of the child's brain be pressed upon. Failing that extreme, to which his wife naturally objected, he would have liked turning, on theoretical grounds. Shandy senior, however, also knew of the forceps and knew of Burton. Let us dwell upon both.

Who was Dr. Burton?

It is hardly necessary to ask such a question. All we know of Dusée, as I endeavoured to make manifest in a recent article contributed to the Journal,[1] is at second-hand. Burton, on the contrary, is remembered as a leading obstetrician in his day and a distinguished antiquary, and is immortalized, under a pseudonym familiar to all lovers of English prose literature, by an enemy, an illustrious, though unfriendly, *vates sacer*.

John Burton, M.D., was the son of a London merchant, and his mother was the daughter of a clergyman named Leake. He was born at Colchester in 1710,[2] and educated at Merchant Taylor's School. In 1733, the year that Butter exhibited Dusée's forceps in Edinburgh, Burton took the degree of M.B. Cantab, having studied in St. John's College. Then he set up in practice at Heath, near Wakefield, where, as will be shown, he mixed himself up with politics. He married, and shortly afterwards went abroad. At Leyden he studied under Boerhaave, and the degree of M.D. was conferred on him at Rheims. On his return he settled permanently at York, and his work there, his foes, and their misdeeds will be discussed further on. According to Percy Fitzgerald, Burton acquired the nickname "Dr. Slop" early in his career, presumably before *Tristram Shandy* was written. That biographer brings forward evidence that Romney (who was in York in 1754, as a pupil of Steele of Kendal) correctly represents Burton, in his pictures of subjects from *Tristram Shandy*, where he gives to Dr. Slop a big head and short, fat body. Burton was long remembered, as an odd man strangely mounted, riding along Yorkshire bridle-roads on the way to assist poor countrywomen. At one time, according to an enemy's account, Burton "broke" for the sum of £5,000. He disposed of his papers on antiquities late in life in order to receive an

1. "Dusée: His Forceps," etc., September 1912; Dusée, De Windt, etc., October 1912.

2. Not to be confounded with a namesake, a learned clergyman, who was born in 1696, and died in the same year as the physician (1771).

annuity for his wife. They died in the same year and were buried in or near Holy Trinity Church, Micklegate. "A tablet on the south side of the Choir is

SACRED TO THE MEMORIES
of
JOHN BURTON, M.D., F.A.S.
and
MARY HIS WIFE.

He	died	19th January	1771, aged	62
She		28th October		58."[1]

He was always held to be, like Dr. Slop, a Roman Catholic, yet it will be seen that in *British Liberty Endangered* he addresses an Archbishop of Canterbury as though he were an Anglican, and, according to Fitzgerald, he wrote to Dr. Ducavel of the Archbishop as "so deservedly at the head of our Church."

He endured persecution from the Whigs, lived to be a subject of a Tory Guelph, and survived for nearly three years the great writer who immortalized him as "Dr. Slop."

We will now turn from the man to his forceps and then to his works, and his adventures.

The Instrument Known as Burton's Forceps.

"Thou has left thy *tire-tête*—thy newly invented *forceps*—thy *crotchet*, thy *squirt* . . . behind thee!"

Tristram Shandy, Bk. II, Chap. xi.

I quote below, entire, the original description of the instrument known and figured in standard works as "Burton's forceps," taken from his *New System of Midwifry*, "Postscript," p. 383. Mr. Butterworth has reproduced the illustration, which is added to this description (Figs. 1—5). It may be seen that the instrument in Burton's drawing is the same as that labelled as "Burton's forceps" in the Obstetrical Museum of the University of Edinburgh (Figs. 6-7),[2] except that the latter is simpler about the lower part. Burton's "big screw *g*, Fig. 5," and the rivets around it are absent in the Edinburgh sample.

1. "St. Swithin," reply in *Notes and Queries*, 11th Series, vi, p. 375 (Nov. 9 1912) to my enquiries about the date of Burton's birth.

2. For this photograph I am indebted to Dr. R. W. Johnstone. Sir J. Byers informs me that no Burton's forceps is included in the collections at Trinity College, Dublin, the Rotunda Hospital and Belfast; nor, I understand, is one to be seen in the Hunterian Museum, Glasgow.

Burton's Description of His Forceps.

"§ 6. In § 101 and 102, Page 211. I showed the Manner of using such Forceps as had hitherto been contrived, with the Advantages and Inconveniences that may attend the Use of them, both to Mother and Child, at the same Time I gave Rules how they are to be made; since which Time, I have invented a new Sort of Forceps, the Use of which is far less prejudicial either to the Woman or Child, and is much more commodious for the Operator. I will therefore first give a Description of the different Parts of the Instrument, with Directions how it should be made; and then shall shew the Manner of using it.

TAB. XVIII *Explained.*

Fig. I. *Lett. a, a, b, b,* represent two sides or Wings of a Pair of Forceps, being in Length, from *a* to the Joint *c*, four Inches. The Ends, *a, a,* when the Forceps is fully extended, are above five Inches distant; and at that Time, the widest Part, as at *b, b,* will be about five Inches and one Quarter. When *a, a* are only extended four Inches, *b, b,* will be four Inches and six Tenths. When *a, a,* are three Inches distant, *b, b,* will be near four Inches; and when *a, a,* are but two Inches distant (the general Diameter of a Child's Neck) *b, b,* will be three Inches and a half; and when *a, a* are quite close, as in *Fig.* 5, *b, b,* will be two Inches and a half from Outside to Outside. Their Thickness is under two Tenths of an Inch.

"*Let. c,* shows a Hole in each Wing, in which the Fixed-Pin *a*, Fig. 2, is to be introduced.

"*d,* shews the Pin that fixes the Wings to the lesser Staves, *e*; which are likewise fixed at the other End to the bigger Staff *g*, at *f*: Both the Joints, *d* and *f*, are a little moveable. The Distance betwixt the Hole *c*, and the Pin, *d*, in Fig. 1 is eight Tenths, and the Distance between the Center of the two Holes, *c, c,* is one Inch and nine Tenths.

"*Let. h,* is the Handle, by which the Instrument may be easily opened or shut, by thrusting up, or pulling at it; these Staves may be about four Inches each in Length.

"*Fig.* 2 and 3 represent two flat Plates, each about one Eighth of an Inch thick; which, with the two Sides, Fig. 2, *Lett. c, c,* when fixed, form a Hollow or Cavity for *Fig.* 1 to move in.

"*a*, Fig. 2, shews the Pin, which goes through the Hole *c*, *Fig.* 1, into the Hole, *a*, *Fig.* 4, and appears at *c*, *Fig.* 5. This Pin is fixed at one End to the Plate, *Fig.* 2, but is not fixed at the other End. These two Pins serve the Wings to move on.

"*b* shews the Holes through which the Screws are put to fix the Plates together, at the upper End of the Instrument.

"*c, c,* are two Pieces riveted on, to form the Hollow for the Staves to move in.

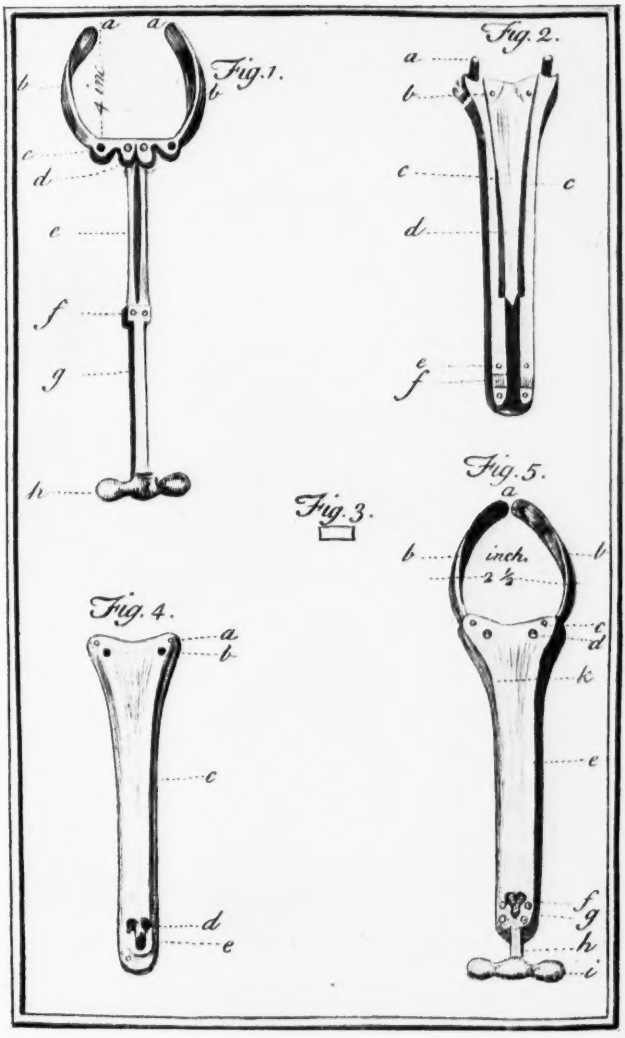
Fig. 1.
a
a
b
b
4 inc.
c
d
e
f
g
h
Fig. 2.
a
b
c
c
d
e
f
Fig. 3.
Fig. 4.
a
b
c
d
e
Fig. 5.
a
b
inch.
2 ½
b
c
d
k
e
f
g
h
i

Figs. 1 to 5.

"*d*, The Backside of the Plate.

"*e*, Four Holes, for Screws to hold the Plates together, and to fix them, when the great Screw *e*, *Fig.* 4, and *g*, *Fig.* 5, is used.

"*f*, is a small Nich, to admit the small Plate, *Fig.* 3, which is to be forced against the Staff, *g*, *Fig.* 1, by the great Screw, *e*, *Fig.* 4, and *g*, *Fig.* 5, to hold the Wings, *a*, *a*, at any Distance required.

"*Fig.* 4 represents a flat Plate, to be screw'd on to *Fig.* 2.

"*e*, is a large Screw, which serves to fix the Wings, Fig. (*sic*) *a*, *a*, at any Distance required; and also serves the Operator to thrust his Thumb against, as he uses it; as will be shewn presently.

"Fig. 5 represents the whole Instrument when ready for Use. The Breadth of the Head from Outside to Outside of the Plate, as at *c*, *Fig.* 5, is two Inches and a Quarter; at *e*, is eight Tenths of an Inch; and at *f*, is about one Inch. The Thickness of the whole Instrument is about half an Inch.

"That the Instrument-Makers may know to what Degree the Wings, *a*, *b*, *Fig. i* (*sic*) should be bent, I here give them a general Rule to go by—Let them draw an Ellipsis whose longest Diameter must be four Inches three Quarters; then let them draw a Line cross each End; where the Diameter shall be just two Inches and a half; and the two Sides of the Ellipsis, between the two Cross-Lines, will be the Length of the Wings; and at the same Time shews the Degree of Curvature necessary for them to be of.(!)

"When the Wings, *a*, *a* of this Forceps are to be extended without moving the Instrument itself, it is to be performed by putting the Fore-Finger round the great Screw, *g*, *Fig.* 5, and thrusting with the Palm, or any other Part of the Hand, against the Handle at *i*; when for every tenth Part of an Inch, that the Staff moves, the Wings *a*, *a*, will be extended one Inch and a Quarter. On the other Hand, when the Wings, *a*, *a*, are to be brought together again, as in *Fig.* 5, then the Operator may thrust the End of his Thumb against the great Screw, *g*, *Fig.* 5 and pull the Handle, *i*, with his Fingers at the same Time; and if he would fix the Wings, *a*, *a*, at any certain Distance from each other, it is to be done by turning the great Screw, *g*, *Fig.* 5, with the Thumb of the Hand that is without the *Vagina*.

"I shall now show the Manner of using this Instrument:—— Suppose, then, that a Child's Head had passed the *Os Uteri* in its natural Position, but proceeded no further, either from the Mother's Weakness, violent Flooding, or that the Head was something too large. In this Case, I introduce a Finger or two of my left Hand into the *Vagina*; and then I take my Forceps in the right Hand, with the Wings *a*, *a*, quite close, as in *Fig.* 5, which End I slide along my left Hand and Fingers which are within the *Vagina*, having the great Screw, *g*, *Fig.* 5, towards my left Hand; so that one Wing will be

towards the *Pubis*, and the other towards the *Perinæum*: Being thus introduced flat along the Side of the Child's Head, till the End, *a*, reach the Neck or Ear; I then with the right Hand, gently expand the Wings, *a*, *a*, in the Manner already described; I also slip one of the Wings *a*, edgeways between the *Os Pubis* of the Woman and the Head of the Child, which is done by gently turning the Handle, *i*, with the right Hand, while the Fingers of the left Hand, which are within the *Vagina*, assist also, and place the End, *a*, of one Wing against the Neck of the Child below the Ear; when of Course the other Wing must be parallel; I then try with a Finger to prevent anything being betwixt the Wings and the Child's Head; and with my right Hand draw the Wings as near together, in the Manner above directed, till I think the Child's Head sufficiently squeezed not to injure it, which I can judge of by the Fingers which are within the *Vagina*; I then fix the great Screw, *g*, *Fig.* 5, with my Thumb, as above mentioned; by this Means, the Head can be no more compressed, neither can the Instrument easily slip off. This being done, I withdraw the left Hand, and take hold of the Forceps about *k*, *Fig.* 5, and assist the right Hand in pulling out the Head, from which, when sufficiently advanced, I, with my right Thumb, loosen the Screw, *g*, and take away the Forceps.

"From what has been said, it is evident my Forceps are (*sic*) better than any yet contrived: *First*, because the instrument may be introduced at once, whereby the Operation will be sooner performed. *Secondly*, As the Wings from *a* to *c*, *Fig.* 1 and 5 are within the *Pelvis*, they can be expanded, more or less without putting the Mother to any Pain. *Thirdly*, The Hand or Fingers, that are within the *Vagina*, will not only move less than when employed in fixing the other sort of Forceps, but also will do it in less Time; both which must occasion less Uneasiness to the Woman. *Fourthly*, As the Joints of these Forceps are within the *Pelvis* the Wings will be applied so as to fit any Child's Head; wherefore the Parts of the Woman will be less extended, than with the old Sort of Forceps, And, *Fifthly*, This Instrument is less prejudicial to the Child's Head, because the Wings can be so fixed, at any determinable Degree of Expansion, as not to compress the Head more than necessary; whereas, with the other Forceps, the more you pull the more you squeeze the Child's Head."

Such was Burton's forceps, as described by the inventor, as recognized by subsequent obstetricians and as represented in such authoritative sources of information as Mulder's and Kilian's illustrated works. It seems a clumsy instrument. Is it not possible that it really damaged the face of some infant,[1] or its breech or genitals,[2]

1. *Tristram Shandy*, Bk. III, Chap. xxvii.
2. *Ib.*, Chap. xvii.

Fig. 6.

Fig. 7.

or that it actually wounded the hand of some colleague who "presented" his fist, as did good Uncle Toby,[1] to represent the fœtal head, on some occasion when Burton demonstrated the use of his instrument? Possibly the cut thumb[2] or damaged teeth[3] of Dr. Slop are allusions to some injury really received by the obstetrician from the forceps. Then Dr. Slop's remark that "the points of my forceps have not been sufficiently arm'd or the rivet wants closing,"[4] further imply that, as we can understand, the instrument proved a failure. *Anyhow the forceps which he actually used, and which is preserved at York is not the forceps which goes by his name.* Let us consider the York forceps.

Burton's Own Forceps now at York.

The instrument actually used by Dr. Burton is preserved in the Library of the York Medical Society in York. The honorary librarian, Mr. A. B. Northcote, has kindly copied the tickets placed in the case which holds the forceps:—

"Midwifery Forceps which belonged to Dr. John Burton (1710—1771) the prototype of Dr. Slop in *Tristram Shandy* (Compare *Illustrations of Sterne*, John Ferriar, M.D., 8vo, 1812). "Of all men in the world, Dr. Slop was the fittest for my father's purpose, for his newly-invented forceps was the armour he had proved to be the safest instrument in deliverance."—*Tristram Shandy*, Chap. xix.

"These forceps passed from Dr. Burton to his friend Edward Wallis, Surgeon, of York, and descended successively through Mr. Wallis, jun., Mr. B. Dodsworth and Mr. Ball, who presented them to the York Medical Society."

A further note relates how Burton was the original "Dr. Slop." "The spectator is invited to believe that these are the identical instruments with which the great Tristram was ushered into the world, but not without detriment to the bridge of his most illustrious nose."

"The case holding the forceps also contains two Book-plates (*Ex. Libris*) of Burton, photographs, both in Jacobean Style.

"*A*. E. Libris Joannis Burton de Heath in comit. Eborac., M.B., M.D. (Printed).

"*B*. Joannes Burton, M.B., M.D. (in writing)."

This forceps is quite different from that which Burton describes in his *Essay*, as may be seen from the photogravures (Figs. 3 and 9) for which I am indebted to Mr. J. S. Gayner, M.R.C.S., of the York County Hospital. It is in many respects, of the Dusée type.

1. *Ib.*, Chap. xvi.
2. *Ib.*, Chap. xvi. It "made me a little awkward."
3. *Ib.*, Chap. x.
4. *Ib.*, Chap. xvi.

The York forceps, as it may conveniently be called (Figs. 8 and 9), is of about the same length as the Dusée's forceps in the Museum of the College of Surgeons. Each blade and handle are forged in one piece. Each handle is slightly flattened laterally and ends in a hook turning outwards and upwards for about two inches. The handles are not parallel to each other, as in Dusée's forceps, but are bowed strongly outwards. We can understand that the parallel handles in Dusée's instrument must have been unsatisfactory. There is only one lock, where a plain screw (without Dusée's thumb-piece) is fixed into a slotted joint to admit of a radial deviation. In this respect it resembles a modified Grégoire's forceps in the Museum of the Royal College of Surgeons, where indeed the slot is even simpler, being without the two extra, smaller screws which in this forceps are fixed at each extremity of the slot.

In Grégoire's own instrument (as figured by Boehmer) the joint had a much more complicated slide-lock. The blades in the forceps at York cross at the lock, they have no pelvic or perineal curve, and the cephalic curve is much less marked than in Dusée's. It reminds the observer of the curve of the blades in Graily Hewitt's forceps. On the other hand, the blades, as in Dusée's forceps, are not fenestrated,[1] and terminate in a broad extremity which bears a concave notch meant to prevent pressure on the temporal vessels. The distance between the extremities of the blades when closed appears about 1 inch (2·5 cm.).

No drawing of a forceps precisely similar to this is to be found in either Mulder or Kilian's Atlases. Professor Kouwer, of Utrecht, has recently forwarded me two photographs of a forceps in the Mulder collection, which is not figured in Mulder's *Historia* (Figs. 10, 11). It more closely resembles the York forceps than any other similar instrument, but the lock is more complicated and the blades, non-fenestrated as in the York instrument, are shorter, more curved, and apparently not concave at their free extremities. Possibly Burton sent a sample of the York type to his old friends in Holland and this instrument is a subsequent modification, or else the York forceps was copied by Burton from a Dutch model.

This York forceps is of the old French type, before Levret introduced the pelvic curve, but with what Levret made out to be the one essential feature introduced by Dusée, namely, the concavity at the broad free end of each blade. Burton probably knew of Dusée's forceps through Butter's paper in the Edinburgh *Medical*

1. Bing's (of Copenhagen) forceps had non-fenestrated blades, but they were narrow and convex at their extremities, and the handles could be taken off or fitted on *below* the lock, which was of the French type and secured by a simple screw with a thumb-piece.

Fig. 8.

Fig. 9.

Essays, to which publication, as will be seen, Burton himself contributed.

Thus it is possible that Burton tried Dusée's forceps and found, as Smellie did, that it was in several respects unsatisfactory. He therefore modified it, and his modification is represented by the instrument preserved at York. Then he devised the forceps which goes by his name, but it proved too complicated, as is hinted at in *Tristram Shandy*, and so he fell back on the simpler instrument which ultimately came into his successor's hands and is preserved in the city with which his name is identified.

Dr. Burton's Text-Book on "Midwifry."

"Sir," replied Dr. Slop, "it would astonish you to know what improvements we have made in late years, in all branches of obstetrical knowledge, but particularly in that one single point of the safe and expeditious extraction of the *fœtus*, which has received such lights, that, for my part" (holding up his hands) "I declare, I wonder how the world has——" "I wish," quoth my Uncle Toby, "you had seen what prodigious armies we had in Flanders." [1]

"It seems he had scattered a word or two in his book in favour of the very thing [podalic version] which ran in my father's fancy." [2]

"There was a scientific operator within so near a call as eight miles of us, and who, moreover, had expressly wrote (*sic*) a five shilling book upon the subject of midwifery, in which he had exposed not only the blunders of the sisterhood itself, but had likewise superadded many curious improvements for the quicker extraction of the fœtus." [3]

We will now turn to "Dr. Slop's" five shilling book with its account of advances made in those days in "all branches of obstetrical knowledge." The title-page is here reproduced in full:

An ESSAY towards a Complete New System of MIDWIFRY, Theoretical and Practical Together with The Descriptions, Causes and Methods of Removing or Relieving the Disorders peculiar to Pregnant and Lying-in WOMEN, and NEW-BORN INFANTS. Interspersed with Several New Improvements; Whereby Women may be delivered, in the most dangerous Cases with more Ease, Safety and Expedition, than by any other Method heretofore practised: Part of which has been laid before the Royal Society at *London*, and the Medical Society at *Edinburgh*; after having been perused by Many of the most Eminent of their Profession, both in *Great Britain* and *Ireland*; by whom they were greatly approved of.

1. *Tristram Shandy*, Bk. II, Chap. xviii.
2. *Ib.*, Chap. xix.
3. *Ib.*, Bk. I, Chap. xviii.

All Drawn up and Illustrated with Several Curious OBSERVATIONS, and Eighteen COPPER-PLATES. In FOUR PARTS.

By JOHN BURTON, M.D. *Si quid novisti rectius istis, Candidas imperti; si non, his utere mecum.* Hor.

London. Printed for JAMES HODGES, at the *Looking-Glass*, facing *St. Magnus' Church, London-Bridge.* MDCCLI.

Such is our author's title-page. His "Finis" is touching: "I own I have not completed the *Treatise* so full as it should be; but yet, I hope, it may be a means of spurring up some abler Head to finish what I have begun; as HORACE says upon another Occasion:

—Fungar vice Cotis, acutum
Reddere quae Ferrum valet, exsors sibi secandi.
Art. Poet. Ver. 304."

Capital Latin, but did Dr. Slop mean "full" to be an adverb?

After the title-page comes the following Address:—

To the PRESIDENTS AND MEMBERS of the ROYAL SOCIETY at *London* And of the MEDICAL SOCIETY at *Edinburgh.*

GENTLEMEN,

As the chief Motive for the very Foundation of Your several SOCIETIES was, to propagate all beneficial knowledge to the World in general; but more particularly that Branch of it whereby the Lives and Healths of Mankind are to be preserved, I take the Liberty, therefore to publish the following *Essay* under Your Protection; which I am the more induced to do, as some of the *Improvements* and *new Discoveries* in the Practice of Midwifry therein mentioned have already been laid before Your respective Societies after having been perused by many of the most Eminent in their Profession, in this Kingdom and *Ireland*, who have unanimously approved of them.

The Approbation of different SOCIETIES (the most remarkable in the World for their Learned and superior Skill in the Practice of every Branch of their respective Professions) is no less a Satisfaction, than an Honour done to me; as it will certainly be a Means of depriving Those who abound with *Ill-nature, Envy* and *Detraction*, of their most *poignant Pleasure*; And at the same Time will silence, or stop the Mouths of the most ignorant Part of Mankind, who will always find Fault with what they do not understand; when the only Defect is in their own Brains.

As I have not the Honour to be personally known, except to very Few of YOU, it cannot be supposed that Your Approbation of the *Improvements* laid before You, could proceed from any other Motive, than from Your generous Concern for the Welfare of Mankind, and from Your humane Disposition to forward whatever may contribute towards the Advancement of any Branch of Medicinal Knowledge.

THAT Your several SOCIETIES may still improve in every Branch of Learning and ever be an Honour to the BRITISH Nation, is the hearty Prayer of

GENTLEMEN,

Your most Devoted and Most Obliged Humble Servant,

JOHN BURTON.

York, May 29,
1751.

After this Address comes the Preface proper. The following characteristic passages may interest the reader:—

"*But for those People who like* Birds of Night scream in the Dark, *when none can see them*; *and like* cowardly Enemies, unseen, *shoot their envenomed Darts at me in* secret Whispers *or* anonymous Papers, *such* Creatures *may spit their* malignant Choler, *till it consume* Themselves, *before I shall regard them in the least.*"

These words were written over nine years before the appearance of the first instalment of *Tristram Shandy* and about five years after Burton's persecution by Dr. Jaques Sterne and the Whigs of York.

With characteristic sensitiveness he states in his Preface, in respect to his illustrations:—

"*The Whole is interspersed with* Eighteen Copper-Plates . . . . *Some inconsiderate People look upon* Copper-Plates, *in this Case, to be useless, but judicious Persons must be sensible that in describing objects not to be seen, the Reader will have a better Idea of them from a true Representation on a* Plate *than only from a bare Description, as is evident in all Branches of* Philosophy."

The Preface is followed by a list of the names of the authors and books quoted in the main text. Giffard, Mauriceau, De la Motte and Heister are included, whilst the Chamberlens (!), Smellie and Chapman are conspicuous by their absence. The first part of the text is a fair sketch of the Anatomy and Physiology of Pregnancy, which takes up over one-third of the *Essay*, and includes some excellent practical observations about the character of the os uteri, etc. The next part, on the Diseases of Pregnant Women, occupies only fourteen pages; the third directs the reader how to assist mother and child in preternatural labours; and the fourth treats of abortions. Lastly, there is a "Postscript" of twenty-four pages, which includes the description of Burton's forceps and the illustrations reproduced in this article. The touching *Fungar vice Cotis*, also noted above, brings up the rear.

In truth this *Essay* is a very fair manual, and of credit to its author. We must dwell on certain passages which more specially

concern us. As, like Sterne's Hafen Slawkenbergius *De Nasis*, it is not at everybody's disposition, so " it may not be unacceptable to the learned reader to see the specimen of a few pages of his original." [1]

Burton condemns the crotchet,[2] and considers that the double or forceps crotchet, really a different instrument, is safer, but it is too bulky. In arguing the difficulty of applying the crotchet he refers to tables of measurements of the female pelvis and the fœtal head, ending: " From all that I have here said, we see what Inconveniences attend even the Forceps." [3]

When the pelvis is only a little narrowed, or the mother and the uterine contractions weak, " and if there be any Reason to imagine that the Child is living, and be so far advanced *that it cannot be turned to be brought by the Feet*,[4] then the best Instrument is certainly a *Proper*[5] Forceps, which had better be too little than too big because of the pliable Texture of the Child's Head which will easily yield to Pressure."

" Some Persons are for having the Forceps and other Instruments covered with Leather or some such Thing; but this is very wrong, and is very prejudicial to the Mother. This Kind of Forceps is twisted with Leather in a spiral Manner, round the Bow, or that Part which goes on each Side of the Child's Head, and is betwixt it and the *Uterus* and *Vagina* of the *Woman*." Burton then shows how the vaginal mucus is a better lubricant than leather which is most objectionable for other reasons. We will return to this passage when we treat of the *Letter to William Smellie*.

Burton describes Mauriceau's *tire-tête*,[6] and Ould's *terebra occulta*,[7] a trephine perforator first used in 1739, but Burton adds that Deventer nearly fifty years ago (about 1700) used a piercer, guarded by a sheath, to perforate the head or abdomen of a dropsical child. " I also have made use of one of the same Kind of *Terebræ Occultæ* as Ould's, upwards of seventeen years ago (about 1734)," [8] made at York. He found Ould's instrument, even after he had made a modification, hard to clean. This modification was doubtless " thy *tire-tête* " mentioned in the eleventh chapter of the second book of *Tristram Shandy*. Smellie was more generous to Burton than the latter was to him. In his *Treatise* (McClintock's N.S.S. Ed., vol. i,

1. A footnote to the amusing parallel Latin and English versions of Slawkenbergius' tale, *Tristram Shandy*, introduction to Bk. IV. The Latin is not given in many editions.
2. P. 209.
3. P. 214.
4. The italics are our own.
5. In italics in the original.
6. P. 220.
7. P. 223.
8. P. 226.

p. 293), when discussing substitutes for the crotchet, Smellie mentions "Ould's terebra occulta, with the improvement made in it by Dr. Burton of York." Burton criticizes freely other primitive perforators used in his days.[1] Amongst them is a ring scalpel employed by "Dr. SIMPSON, Physician at *St. Andrew's* in *Scotland*."

The drawing (*loc. cit.*, Pl. XVI, Fig. 11) shows that this instrument was simply the ring-knife for opening abscesses ascribed originally to Albucasis; two samples are preserved in the Museum of the College of Surgeons. In Vol. v, Pt. I of the Edinburgh *Medical Essays* Monro in "A Description of several Chirurgical Instruments," figures a similar ring-scalpel as "A Sort of *Bistoire cachée* in Mr. *John Douglas's*[2] Possession," apparently unaware that it was an ancient instrument. Simpson, of St. Andrews, put the ring-scalpel on his finger, perforated the fœtal head with the knife, and thrust his finger into the cranial cavity, making it act as a *tire-tête*! Did Burton take Simpson's statements for granted? If Smellie had even suggested such a thing we can guess what his adversary would have said.

Further on Burton strongly condemned the practice of amputating a presenting arm, which "can never forward the Birth in the least."[3] Speaking of the inconveniences of reckless fœticide, he notes: "There are also many Husbands, who would lose the Life-Estate upon the Death of their Wives for Want of having a Child born alive."[4] In cases of cicatricial contraction of the os externum or "if the Orifice becomes scirrhous, so as to admit of no Dilatation,"[5] an incision must be made. But Cæsarean section may be needed. Incision, Burton teaches, is attended with much danger. "The Manner of performing this Operation (incision) is more the Province of a Surgeon to direct than for me."[6] Burton dwells a little on Cæsarean section, "as there has been so much said for and against this terrible Operation."

The chapter on Abortion, containing several clinical reports and references to Giffard and other contemporaries and the pages devoted to the lochia and lactation are fairly well prepared. To the case of a

1. Burton's own "extractor" or *tire-tête* perforator (p. 231) is figured, Pl. XVII, Figs. 6, 7, 8 and 9; the drawing is very coarsely executed and much too small.

2. Douglas was another opponent of Smellie, objecting especially to his wooden forceps. He disliked men-midwives in general, attacking them in 1736 in his *Short Account of the State of Midwifery in London*, etc. Next year, 1737, Chapman published a *Reply*. Mrs. Nihell, the midwife, abused male obstetricians in her *Treatise on the Art of Midwifery* (1760), where she writes as offensively of Smellie as Sterne wrote of Dr. Slop.

3. P. 247.

4. P. 254.

5. P. 259.

6. P. 260.

uterine polypus and of a headless fœtus, with drawings, I refer elsewhere in this article.

The " Postscript," as the author calls it, is really an extra chapter, and includes, besides the description of Burton's forceps quoted here in full, some notes on the male and female pelvis from Monro's *Anatomy of the Human Bones,* " presented to me by its excellent Author."

The plates are of very unequal merit. For the most part they are coarsely executed, but that which illustrates Burton's forceps and is here reproduced is a good copper-plate. It compares favourably with the very ill-finished drawings of Burton's combined tire-tête and perforator on Plate XVII, an instrument immortalized together with the forceps in *Tristram Shandy.* It bears, as can be seen, no name. I shall refer again to this plate of the forceps when I come to discuss the *Monasticon.*

Burton's Letter to Smellie.

The title-page of this remarkable epistle deserves reproduction: A LETTER to *WILLIAM SMELLIE,* M.D.—Containing Critical and Practical REMARKS Upon his Treatise on the Theory and Practice of Midwifery. By *JOHN BURTON,* M.D. Wherein the various Gross Mistakes and dangerous Methods of Practice mentioned and recommended by that Writer, are fully demonstrated and generally corrected, Likewise the several Advantages or Dangers to both Mother and Child, attending the Turning the last in the Womb to extract by the Feet, or that accrue from the Use of each particular Kind of Instrument, employ'd in delivering Women, are shown in a more ample Manner than heretofore.

Being as an APPENDIX, to both the above-mentioned Author's *Treatises on Midwifery;* absolutely necessary to be perused by all who have read the former's Book, or attended his Lectures with a View to Practice.

To which is affixed a Copper-Plate, representing several Sorts of Instruments used by the Ancients, with the Fillet as improved by the Author thereof. LONDON: Printed for W. OWEN at *Homer's* Head Temple-Bar. MDCCLIII.[1]

The *Letter* takes up two hundred and thirty-three pages of a small octavo book, printed in fairly large type. Its tone is uncourteous and hypercritical. Burton's literary method is decidedly clever, for in order that the public who read his *Letter* should miss nothing brought against Smellie, he begins with two summaries, the first being in the form of a preface, headed " To the Reader," and

1. Although this *Letter* was written only two years after Burton's " *Midwifry* " the word *Midwifery* is spelt throughout in the modern manner.

the second a very complete table of contents. Burton was wise, for the reader soon gets weary of the writer's monotonous depreciatory criticism, whilst on the other hand, if he only desires to find out what the rivals thought about the anatomy of the pelvis, or if, on the contrary, he is solely interested in their views about forceps, he will find what he seeks at a glance on consulting the table of contents. Should a more desultory reader seek for a brief digest of the whole letter, to save him the trouble of wading through it from beginning to end, he will find that the preface is an excellent digest. In that preface Burton systematically condemns Smellie as an historical writer, as an anatomist, as a theorist and as a lecturer or practitioner, the full terms of the condemnation being the *Letter* itself. The tone of the preface is unpleasantly personal, and that of "The Contents" worse, as the first lines read: "*Proved that* Smellie (*or the Person he copies from*) *has never read the Author's quoted, never understood them, or wilfully misrepresented their Meaning, from* Page 1 *to* 59."

The beginning of the *Letter* is highly unconciliatory:—

"Sir. Upon a cursory Perusal of your Treatise on the *Theory and Practice of Midwifery*, with the Introduction thereto; and comparing them with a few common-place Remarks I had made some years ago upon this Subject, I cannot help thinking you are grossly mistaken in various Parts."

The second paragraph concludes with some words which the reader of *Tristram Shandy* will recognize as old acquaintances. After accusing Smellie of confounding all nature, palming on his readers "an author that never existed" and misrepresenting other authorities, Burton concludes: "If any Thing can be added to shock human Faith, or prejudice your Character as an Historian or Translator, it is your having converted *Lithopædii Senonensis Icon* (which you call *Lithopaedus Senonensis*) an inanimate petrefied (*sic*) Substance, into an Author, after you had been *six years cooking up your Book*."

Of course the italics in the last sentence are from the original, although such a typographical resource is hardly necessary for emphasis: Smellie is accused of never having read Hippocrates and his medical descendants. He appears to have culled his knowledge of the ancients from Spachius, and we cannot help thinking that Smellie "or the person he copies from" was really content more than once with second-hand information. Burton, at p. 21, returns to the Lithopaedus blunder:—

"The seventeenth Author, collected, as you tell us, by *Spachius* is *Lithopaedus Senonensis*, which instead of being an Author, is only the Drawing of a petrefied Child, when taken from its Mother, after she was opened; and this is evident from the Title, *Lithopaedius*

Senonensis Icon, which, with the Explanation, is contained in one single Page only. The Account of it, as published by *Albosius* in 1582, in Octavo, may be seen at the End of *Cordaeus's* Works in *Spachius*, whence again, I think, it is evident you must have taken your Extracts from some bad Copier. Your next Author that follows *Lithopaedus Senonensis*, as you call him, is *Caspar Bauhinus*, &c." A footnote in reference to Spachius's quotation of *Albosius* reads: "This Error is corrected in the second Edition; but how the Author, as he tells us, *he was six years in cooking up this performance*, could at first mistake the Title, and represent the petrefied Child as an Author that he had perused and taken Extracts from *for the Information of those who have not Time or Opportunity to peruse the Books from which they are collected*, is what surprises me very much." We suspect that Smellie wrote and corrected much of his work in a hurry.

The biography of Sterne and the critics of *Tristram Shandy*, especially Wilbur Cross, lay great stress on this exposure of Smellie's error as it affords the clearest proof that Dr. Slop was meant for Burton.

In Chapter XIX of the second book, which includes the allusions to Slop's "newly invented forceps" the autobiographer, as we may call Tristram, states: "My father, who had dipped into all kinds of books, upon looking into *Lithopaedus Senonensis de Partu difficili*, published by Adrianus Smelvgot,[1] has found out, &c." [2] An asterisk is placed after *Senonensis* and the footnote it indicates reminds us of the grave nonsense appended to passages in *Gargantua* and *Pantagruel*, the *Waverley Novels* and the *Ingoldsby Legends*.

"The author is here twice mistaken; for *Lithopaedus* should be wrote thus, *Lithopaedii Senonensis Icon*. The second mistake is that this *Lithopaedus* is not an author, but a drawing of a petrified child. The account of this, published by Athosius (*sic*), 1580, may be seen at the end of Cordaeus's works in Spachius. Mr. Tristram Shandy has been led into this error either from seeing *Lithopaedus's* name of late in a catalogue of learned writers in Dr. ——, or by mistaking *Lithopaedus* for *Trinecavellius*,—from the too great similitude of the names."

It is not clear why Sterne burlesqued a passage in Burton's *Letter* in which that obstetrician really "scored" over his adversary, indicating a great oversight. Smellie's name was, we have seen, omitted in the "catalogue of learned writers" in Burton's *Essay*.

1. Smelvgot=Smellie.

2. The rest of this sentence refers to the pressure on the fœtal head during parturition. Sterne speaks of "the bones of the *cranium* having no sutures," and of "the force of the woman's efforts," not of the uterine musculature. Comment is needless.

Before dismissing this "lithopaedus question" let us take a glance at the original authorities. Albosius, misprinted "Athosius" in *Tristram Shandy*, was Jean Aillebout, and his original report *Portentosum lithopaedium, sive Embryon petrifactum urbis Senonensis* appeared in 1587. Gaspard Bauhin, the first anatomist to describe the ileo-cæcal valve accurately, published in 1591 a Latin translation of Rousset's *Cas singulier d'opération césarienne, nécessitée par un fœtus pétrifié*. Bauhin, Spach and others quoted Albosius. Vettore Trincavelli of Venice left, after his death in 1568, manuscript published as the *Opera Trincavelli*, in 1586. Maurice de la Corde (Cordaeus) published a commentary on Hippocrates' views on gynæcology, and shortly afterwards (1591) Spach issued his *Gynaeciorum*.

Dr. Burton, at p. 113, strongly condemns Dr. Smellie's teaching about the delivery of the placenta, quoting the latter's words:—

"When the Placenta is to be extracted, you direct the Person 'to take hold of the Navel-string with the left Hand, and pull gently from Side to Side, and desire the Woman to assist your Endeavour, by straining as if she were at Stool, blowing forcibly into her Hand, or provoking her to reach (*sic*) by thrusting her Finger into her Throat; as *Ould* has directed in his Midwifery.'"

Posterity which has adopted Smellie's forceps and rejected his critic's instrument, has justified Burton in his strong animadversions against Smellie's management of the placenta.

I will spare the reader any further analysis of Burton's *Letter*. Smellie is made out to be all wrong all through, whilst "my method" is all right, "as I have already shown." The most important passages in this spiteful epistle are those wherein the forceps is discussed. "I think, that my forceps is as good, if not better than any yet continued" (*sic*).[1] Burton is in fact as self-sufficient as Chapman.[2] Then he proceeds to denounce Smellie's practice of wrapping leather round the forceps. He repeats his objections already published in his *Essay*, and quoted in full above. It is interesting to note that in the *Essay* he concludes (p. 216) with this sentence:—

"Some Part of the Blood and Waters must be sucked up by the Leather, and lodge betwixt it and the steel-work, where it will corrupt and stink, let the Maker be as careful as he will in covering it."

In his *Letter*, this sentence is reproduced down to "corrupt and stink," and for "let the Maker . . . etc.," Burton substitutes these words: "and in some Cases, perhaps, may convey Infection" (p. 140–141).

1. *Loc. cit.*, p. 142. 'Continued' is no doubt a misprint for 'contrived.'
2. See Chapman's preface to his *Essay on the Improvement of Midwifery*, 1733.

Why "perhaps"? Burton need not have been so timid for here we know that he was in the right at last. *Magna est veritas.* Smellie's forceps proved, on experience, to be satisfactory. As for Burton's, Sir Alexander Simpson speaks of them as "the ingenious, but very unserviceable, forceps, working like a lobster's claw, contrived by Smellie's contemporary and critic, Dr. Burton of York."[1]

Lowder calls Burton's forceps "a very whimsical contrivance where both blades must be applied at one time—we cannot call this an instrument attended with any improvement as they (*sic*) require more room than we expect to have when we use forceps." (MSS. *Lectures*, 1782, Library Royal Soc. Med.)

On the other hand, who thinks of encasing blades in leather in these days? Smellie insisted that, as Burton puts it, "the Blades of the Forceps ought to be new covered with Stripes (*sic*) of washed Leather, after they have been used, so that every Operator must learn the Art of covering the Forceps to Perfection, because an Artist is not to be found in all Places." Thus Burton was truly scientific and practical in his objections to leather. It is remarkable that "Infection" is only mentioned in the *Letter*, as though the skill of the "Maker" of which we heard in the *Essay* were the first thing to be considered. Yet later on in Davis's *Elements of Operative Midwifery*, a fine illustrated work published in London in 1825, we read (p. 43) about the longer blade, of his asymmetrical forceps, "well padded with soft flannel and the whole covered with leather." Davis's forceps, several varieties, leather and all, are to be seen in the Museum of the Royal College of Surgeons of England. The long blade of his jointed forceps bears two layers of leather with the soft flannel sandwiched between them. They are enough to make a modern obstetrician shudder! Yet leather was used down to a much later date than 1825.

Having vindicated himself and confounded his rival, Smellie, Dr. Burton adds an Appendix. It is a truly Parthian shaft aimed at another gentleman who had incurred his displeasure. The cause of offence, as explained in the first paragraph of this Appendix, is perfectly clear:—

"Having this Opportunity, I could not, in Justice both to the Public and myself, omit taking some notice of the Cavillings and Misrepresentations wrote (*sic*) against my *Essays on Midwifery*, by one *Kirkpatric* an Irishman, and published in the monthly *Review* for *September* 1751, Artic. 33. Which otherways are too inconsiderable to have any such Regard paid to them." A footnote informs

1. "Address to the Midland Medical Society at Birmingham, on 26th October 1900," *Scottish Med. and Surg. Journ.*, Dec. 1900. Sir A. Simpson was referring to the forceps of Burton's *Essay*, not to the York Museum instrument.

us that when the article appeared "The Writer then lodged near the new Church in the *Strand*; but has since removed to some other Place."

The furious diatribes in this "letter" hurled by Burton at a member of his own profession were possibly parodied in the form of excommunication ascribed to Bishop Ernulphus, of Burton's own faith, which Dr. Slop, after his cursing of poor Obadiah, is made to read aloud to Tristram's father and Uncle Toby (*Tristram Shandy*, Bk. III, Chap. xi). The Lithopaedus footnote proves that Sterne had read and studied the *Letter to Smellie*.

Space will not allow of discussion of the question from Smellie's point of view. The main features are given in detail in McClintock's edition of that great Scotch obstetrician's standard work and related in Sir John Byers's recent address.

Burton and the Non-Naturals.

A notice of some of Burton's minor medical works may be of some interest to the reader. I will begin with a quaint little publication. The title-page we will give in full:—

A TREATISE on the NON-NATURALS. In which the Great Influence They have on Human Bodies is Set forth and Mechanically accounted for. To which is subjoin'd, A Short Essay on the CHIN-COUGH, with a new Method of Treating that Obstinate Distemper. By John Burton, M.B. Cantab., M.D. Rhem. *He that contemneth small Things, shall fall by little and little.* Eccles, xix, 1. YORK: Printed by A. Staples and J. Hildyard, Bookseller in York [here follow the names of six London booksellers who sold the Treatise]. MDCCXXXVIII.

According to Murray's *New English Dictionary* the non-naturals in "old medicine" were "the six things necessary to health, but liable, by abuse or accident, to become the cause of disease, *viz.*, air, meat and drink, sleep and waking, motion and rest, excretion and retention, the affections of the mind." The term excited the mirth of the author of *Tristram Shandy*, who could not understand "why the most natural actions of a man's life should be called his non-naturals?" [1]

The title-page is followed by a really graceful, though very flowery dedication of the *Treatise* to Boerhaave, under whom he had studied at Leyden. The Preface, on the other hand, is written in Burton's worst style, being lengthy, wordy and egotistical, redeemed in part by a gracious repetition of his feelings of gratitude for his

1. *Tristram Shandy*, Bk. I, Chap. xxiii. That work, as will be shown, contains other references to Burton's *Treatise on the Non-Naturals*.

master "the great Boerhaave." I need not dwell on the *Treatise* itself, which is mainly based on obsolete physiological theories and hygienic principles. The fourth chapter includes some rather interesting observations on the cold and warm bath, showing that Boerhaave and Burton were, in respect to cleanliness, before their time.

The Short Essay on the Chin-Cough appended to Burton's *Non-Naturals* originally appeared in the Edinburgh *Medical Essays*, Vol. ii, p. 509.

Burton and the Royal Society.

Dr. Burton contributed a report of a case of fibro-myomatous polypus of the uterus to the *Philosophical Transactions*, Vol. xlvi, 1749–50, p. 520:—"XXI. *A Letter from* John Burton, *M.D.*, *to* C. Mortimer, *M.D.*, and *Sec. R.S. concerning the* Exhibition *of an* Excrescence *from the* Womb." This letter is dated York, March 28, 1750, and was read on July 5th in the same year. The tumour is figured, *ib.* Pl. I, Fig. 6. This case is included in Burton's *Essay*, p. 363, Observation XXX, with a smaller drawing, Pl. XVII, Fig. 4. Strange to say, Burton seems to have taken this fibroid polypus for a rarity, and writes in his version of the case in his *Essay*: "Mr. Fell, an eminent Man-Midwife and Surgeon in York, was sent for; but not having met with a Case like this, desired me also to attend the Patient."

Of another contribution made by Burton to the *Philosophical Transactions* (Vol. xliv, 1747), purely antiquarian, more will be said when we turn to his archæological work. The case of snake-bite contributed to the same *Transactions* in 1736, was a report written by a William Burton.

Burton and "Medical Essays."

In 1736 Dr. Burton contributed *An Account of a monstrous Child* to *Medical Essays and Observations Revised and Published by a Society in Edinburgh*, it is published in Part I of Volume v of *Medical Essays*, p. 338. The child "had no Parts of Generation proper either to Male or Female . . . Half way between the Navel and *Os pubis* . . . was a circular Orifice of about an Inch Diameter, in which was a spongious Substance resembling the End of the *Glans Penis* excoriated. Through the several and almost innumerable Pores or Orifices of that spongious Body the Urine oozed continually." The child died of small-pox when about five years old. Burton concludes: "To the Truth of this I can bring many certificates, as well as living Witnesses, if it was thought necessary." This case, evidently an instance of ectopia vesicæ the nature of which Burton failed to interpret thoroughly, must not be confounded

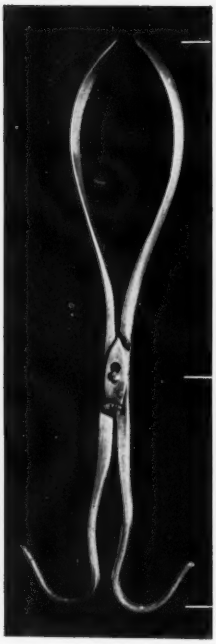

Fig. 10.

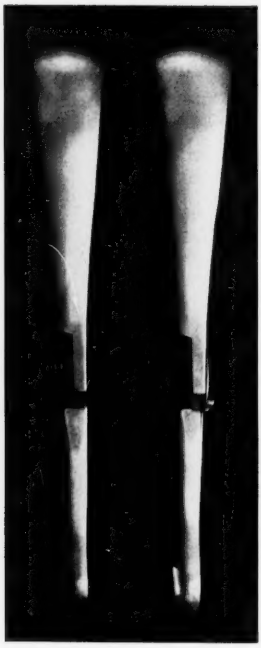

Fig. 11.

with the "monster born without a Head, of which I delivered a Woman in this City (*York*) in January, 1749." The specimen is represented in Pl. XVII of his own *Essay on Midwifry*. In this monster all four extremities were deformed, but the drawings are badly executed, especially about the shoulders and neck, so that the teratology of the suppression of the head is not clear.

It is easy to understand how there has been confusion about the "monstrous child," as the monster reported in Burton's *Essay* has been confounded with the case of ectopia described in *Medical Essays* years before the headless fœtus was born. Again, there is a second edition and also an abstract edition[1] of the Edinburgh *Essays*, which adds to the confusion. I have been able to discover the first report of both monsters in the library of the College of Surgeons.

In a future number of the JOURNAL we will consider Burton's philanthropic work, his persecution, and his antiquarian labours; and will conclude with observations on *Tristram Shandy*.

ILLUSTRATIONS.

Figs. 1 to 5. Photograph of Burton's copperplate engraving of his forceps, in his *New System of Midwifry*. The lettering is explained in Burton's original description of the instrument quoted in full in this paper.

Figs. 6, 7. Photographs of a Burton's Forceps in the Obstetrical Collection, Museum of the Edinburgh University. Taken by Dr. R. W. Johnstone. It closely resembles the instrument represented in Figs. 1 to 5, but is simpler about the lower part. Compare Fig. 5, *f*, *g*, *h*; also Mulder, *Historia Forcipum*, Pl. III, Fig. 8.

Figs. 8 and 9. Photographs of forceps actually used in practice by Dr. Burton, and preserved in the Library of the York Medical Society. Taken by J. S. Gayner, Esq., M.R.C.S. It is of quite a different type to the forceps drawn in Figs. 1 to 5 and Figs. 6 and 7.

Figs. 10 and 11. Photographs of forceps in the Mulder Collection resembling the instrument, Figs. 8 and 9, used by Dr. Burton. Taken by Professor Kouwer of Utrecht.

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Duplication of Bladder, Uterus, Vagina and Vulva, with Successive Full Time Pregnancy and Labour in each Uterus.

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AND

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Marked errors, or arrest of development, in the female genital organs, are not so very infrequent, but vary largely in their importance, according to the extent of the malformation and the part it may play in menstruation, the sexual life, or parturition. Rarely are they such as to interfere in the earlier years of life, and even in adult life they seldom give rise to serious trouble or difficulty; their main interest being in the study and explanation of the train of events in their embryological production; and when we remember that they are derived from three distinct sets of embryonic structures, there is wide scope for speculation and deduction.

Most of the anomalies of the female genital organs are due to arrested development. The patient here described presents unique features, in the thoroughness with which the arrest has been made. The event has occurred at so early a date as to allow of complete duplication of the external and internal genitalia. Further, as a result of the duplication, there has been no interference with function, as shown by the sequelæ; pregnancy and labour, with the birth of living children, from each set of organs.

General appearance. The patient, a married woman, 32 years of age, was of medium height and well nourished. Her general configuration was normal except in two particulars. The umbilicus was absent, and the pelvis was enormously wide.

Description of pelvis and perinæum. The distance between the anterior superior spines of the ilium is eleven inches. There is no symphysis pubis. On palpation in the groin, on each side, Poupart's ligament, pubic spine, pubic crest, and separated pubic symphysis can be felt distinctly. The distance between the two pubic bones measures $5\frac{7}{8}$ inches.

The accompanying *x*-ray photo, for which we desire to thank Dr. Thurstan Holland, demonstrates the pelvis very clearly. The

distance between the symphysis pubis of each side, and the width of the right side of the pelvis as compared with the left, are prominent characteristics.

The curve of the sacrum and coccyx and their relation to the spine of the ischium on the left side, are here shown as forming an almost normal shape of the left half of the pelvis; whereas the right half is merely a large roomy basin. This is the feature referred to later in relation to the mechanism of labour.

A metal speculum in the left vagina, with uterine sound, passing through it into the left uterus, and another sound placed in the right uterus, demonstrate the two separate vaginæ and uteri; and the distance between the points of the sounds, in the upper portion of the photo, show how widely separated the uteri are; and in the lower part of the photo, give an idea of the distance between the two vulvæ.

There is no mons veneris. The interval between the thighs forms a perineal space four inches in diameter. The vulvar area is roughly heart-shaped with the apex directed backwards to the cleft between the nates. The anterior portions of this area, covered sparsely by hair, encroach upon the area covering the pubic bones on each side of a bare area devoid of hair and sweat glands.

When the patient is placed in the pelvic position, with knees drawn up on the abdomen, and the soles of the feet resting on the bed, the distance between the folds of the groin is found to be $6\frac{1}{2}$ inches; and the presence is noted of two separate laterally placed vulvæ, with a single anus (behind the left vulva), and a natal cleft behind the anus.

The vulvæ are almost normal in size and form. Labia majora are present. The medial labium on each side is less prominent than the lateral labium; within each vulva are labia minora, clitoris, vestibule and the openings of urethra and vagina. The ostia vaginæ readily admit two fingers and are three inches apart. In 1910, when the patient was first seen, each ostium vaginæ showed the remains of a hymen.

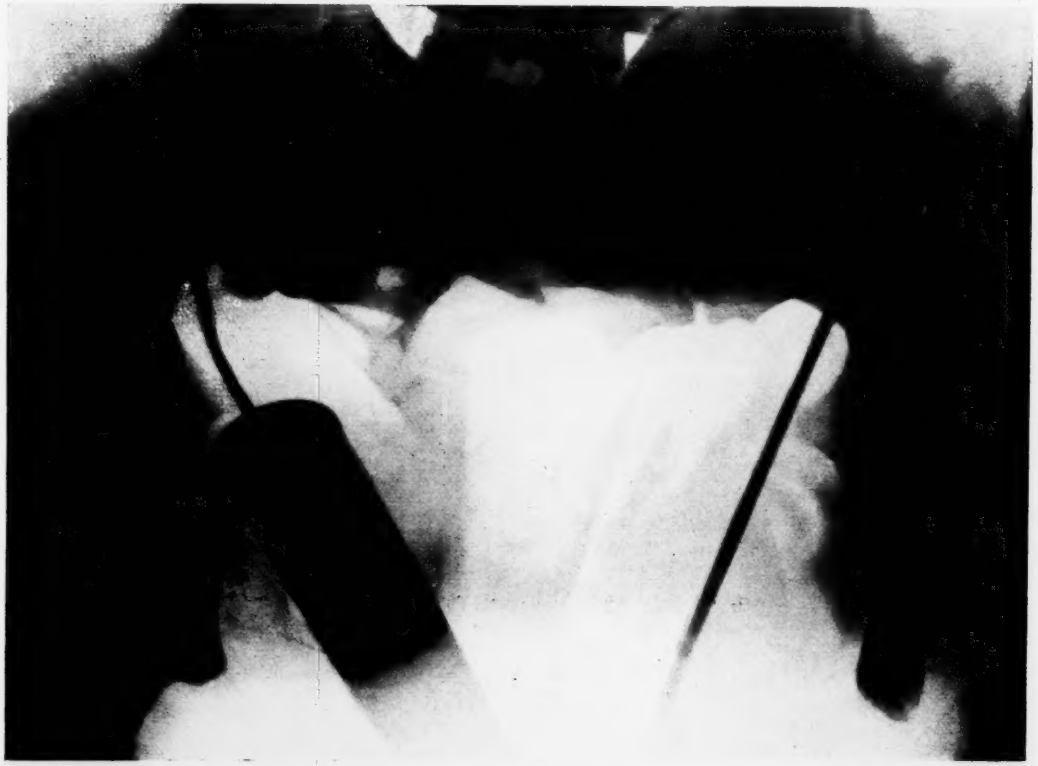
The labia majora and clitoris are not so well formed on the right side as on the left.

Behind the left vulva are the perinæum and anus.

Bimanual examination shows on each side, besides a normal vagina, a well-formed cervix and uterus, which can be moved freely, independently of one another.

A single ovary can be felt at the outer side of each uterus.

The urethræ are apparently normal; on passing a catheter six ounces of clear urine were drawn off by the left urethra. A catheter passed through the right urethra drew off four ounces of turbid urine containing pus. Dr. Thurstan Holland, after injecting collargol, through each urethra, succeeded in demonstrating on the *x*-ray screen the existence of two distinct and separate bladders.



Speculum in left vagina.
Sound passed into left uterus.

Sound passing through right
vagina to right uterus.

In the area between and anterior to the two vulvæ, opposite to the separated pubic bones, the following facts are observed. The area of skin is devoid of both hair and sweat glands. On palpation it is found to consist solely of thin skin covering a hole, beneath which abdominal viscera can be palpated. The margin of this vacuity in the abdominal wall presents a thickened clearly demarcated border, bounding a circular opening beneath the skin about $1\frac{1}{2}$ inches in diameter. All round the opening the aponeurotic covering of the abdominal wall is thick and resistant, particularly behind it, where it forms a dense broad band stretching across between the pubic bones, in front of and between the vulvæ.

In relation to the anterior border of this space, and a little to the right of the middle line, the skin is drawn up into a puckered, somewhat stellate, raised cicatrix, about an inch in diameter.

We suggest that this area comprises the umbilical area. The vacuity in the abdominal wall is the umbilical orifice. We suggest that there has been no allantois or proper umbilical cord; that the fœtal belly-wall was in contact with the placenta, and that at birth the orifice was ligatured and the thin skin drawn over it to cover it, and complete the body-wall.

The stellate cicatrix represents a pseudo-umbilicus, and the closure of the fœtal body cavity at its junction with the placenta.

We regret that we are unable to get any information bearing upon the birth of the patient herself.

The obstetric history. The obstetric history does not present any startling features, yet a dystocia of an unusual order was the cause of bringing this woman under observation.

When first seen in April 1910, she was in labour, the fœtal head presenting at the right vulva, the fœtus occupying the right uterus, and after the completion of the first stage of labour the head was seen forming a marked tumour in the right gluteo-perineal tissue, and the only mechanism of labour present was that of descent of the head, straight downwards; the head occupied the vagina and was pushing its posterior wall against the gluteo-perineal tissue, stretching and thinning out the muscles and tissues forming what we may designate the false perinæum, as opposed to the real perinæum described on the left side.

The wide separation of the pubic bones, in front, and the enlargement of the cavity of the pelvis on the right side, so well shown in the *x*-ray photograph, demonstrate clearly the reason for this absence of mechanism of the fœtal head; for it had only a wide space with soft tissues to traverse, and there was on this right side of the pelvis no "curve of Carus" to be negotiated: in fact, the pelvis was very analogous to that of the ruminant. The birth of the fœtus being arrested by the soft tissues, an incision was made

through the right lip of the vulva, downwards and to the right, for a distance of three inches, and the child was easily delivered.

The child was a male, weighing 4 lbs., well formed, and showing no signs of abnormality: full time, but feeble.

The incision was sutured, and the patient made a normal convalescence.

Our interest in the patient, and attention paid to her, in order to secure a record, so disturbed her that she practically ran away from us, and we were unable to trace her until this year, when she presented herself at the hospital for assistance—this time pregnant in the left uterus.

In due course labour came on, and was completed naturally on April 9 1912: there was no dystocia, the vertex presented in the first position, and there was a distinct movement forwards of the occiput by the movement of internal rotation, so that the head, occupying the smaller left side of the pelvis, was evidently held by it, and the movements of internal rotation, and rotation through the pelvic curve, so communicated to the fœtus that it was born in a normal manner.

The child was again small, weight 4 lbs. 8 oz., female, healthy, and apparently an 8 months' fœtus.

Although both mammæ are well formed, and the nipples normal, lactation which commenced early very soon failed.

Explanation of the abnormalities. This case presents a series of extraordinary and unique abnormalities.

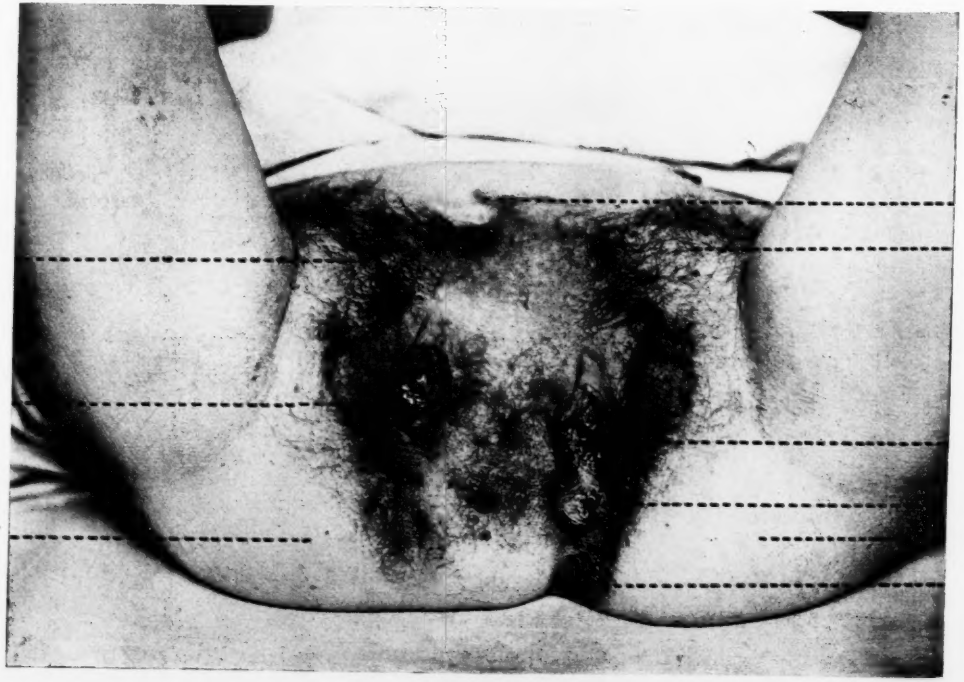
The salient features of the case are: a single anus and rectum; duplication of vulvæ, urinary and genital ducts, bladder and uterus; wide separation of the pubic bones; and the absence of a true umbilicus. (Fig. 3.)

Profound alteration or arrest of development has occurred at an early period of embryonic life to produce this condition. In order to decide the causes, one must proceed by analysis.

Some normal processes have occurred, others have not.

In the normal process of development of the hinder end of the embryo, the internal cloaca receives (1) the lower end of the alimentary canal, (2) the allantoic diverticulum (placed medially and ventrally), (3) the two separate ureters opening laterally into the ventral side of the cloaca, and (4) in the female, the united Müllerian ducts, which form a single utero-vaginal canal, and end in the angle of junction of the alimentary canal and the allantoic diverticulum. (Fig. 1.)

The rectum and anal canal are separated off by a double process of growth—a fold extends anal-wards, which separates the dorsal part of the cloaca and alimentary canal from the ventral part of the cloaca and allantoic diverticulum. This fold is succeeded by a septal growth, which eventually extends to the external cloaca, and


Umbilicus
Left os pubis
Right os pubis
Right vulva
Left vulva
Anus
Left ischial tuberosity
Right ischial tuberosity
Natal cleft

converts the dorsal part of the cloaca into rectum and the ventral part into genito-urinary tract. Finally, by the rupture of the anal membrane and union with the proctodæum the anal canal and anus are formed. As the rectum and anus are normal in this instance, we may presume that these events have occurred, and may therefore eliminate this portion and confine our attention to the process of development of the ventral part of the cloaca. (Fig. 1, B. C.)

There is still doubt as to the relative share taken in the formation of vagina and urethra by the internal cloaca and the external cloaca respectively.

From an examination of human abnormalities the balance of evidence is in favour of the whole length of the vagina being formed from the (united) Müllerian ducts, the external cloaca merely forming the vestibule of the vulva (uro-genital sinus).

The present case strongly supports this view.

The two Müllerian ducts have not, as they do normally, united to form a single utero-vaginal tube. While still separate, at an early period of development, and from a cause to be referred to later, they have been drawn backwards to the surface of the body, in the fold which assists in separating off the rectum, so that they have opened separately on to the surface of the external cloaca before the time of differentiation of the external organs. (Fig. 2 A B.)

Each Müllerian duct has then become separately differentiated into vagina, uterus, and Fallopian tube.

The ureters are originally dorsal in position to the Müllerian ducts. Their caudal termination is into the side of the internal cloaca on its ventral aspect. In normal circumstances this part of the cloaca takes a share along with the allantoic diverticulum in the formation of the bladder, which is drawn into a position ventral to that of the Müllerian ducts, carrying the two ureters with it in its growth.

The formation of a secondary septum leads to the separation of the urethra from the vagina, the former opening into the uro-genital sinus (vestibule) in a position ventral to the latter. (Fig. 2 B.)

The abnormalities in this case appear to be all attributable to one cause—the absence of an allantois.

There has been no median ventral diverticulum from the internal cloaca. The Müllerian ducts have remained separate and have been carried back into direct connection with the external cloaca.

The ureters have joined the internal cloaca.

In normal circumstances the bladder has a double origin—the main part of the organ is derived from the allantoic diverticulum, single and median; the basal part (trigone), which is joined by the ureter, is formed from the ventral part of the internal cloaca (Fleischmann [1]).

In a case previously described (Paterson and Emrys-Roberts [2]), in which there was no allantois, the ureters were connected to two lateral, muscular pouches, which opened by narrow slits into the internal cloaca.

In the case of this woman, a similar development of the internal cloaca seems to have occurred, as bilateral developments of the sides of the internal cloaca, in connection with the termination of the ureters, which are kept apart by the Müllerian ducts. In consequence of this and the absence of an allantois the ventral cloaca beyond the opening of the bladder (and ureter) has been drawn out into double urethræ opening separately with the vaginæ into double external cloacæ.

Absence of the allantois. One must go back a long way in the life history of an embryo to understand the causes of this anomaly.

In normal cases the allantois is largely responsible for the formation of the umbilical cord. It extends backwards clinging to the amnion and connects the embryo to the chorion. It carries the umbilical (allantoic) vessels to the placenta, and its primitive proximal diverticulum from the ventral aspect of the alimentary canal gives rise to the bladder and urachus.

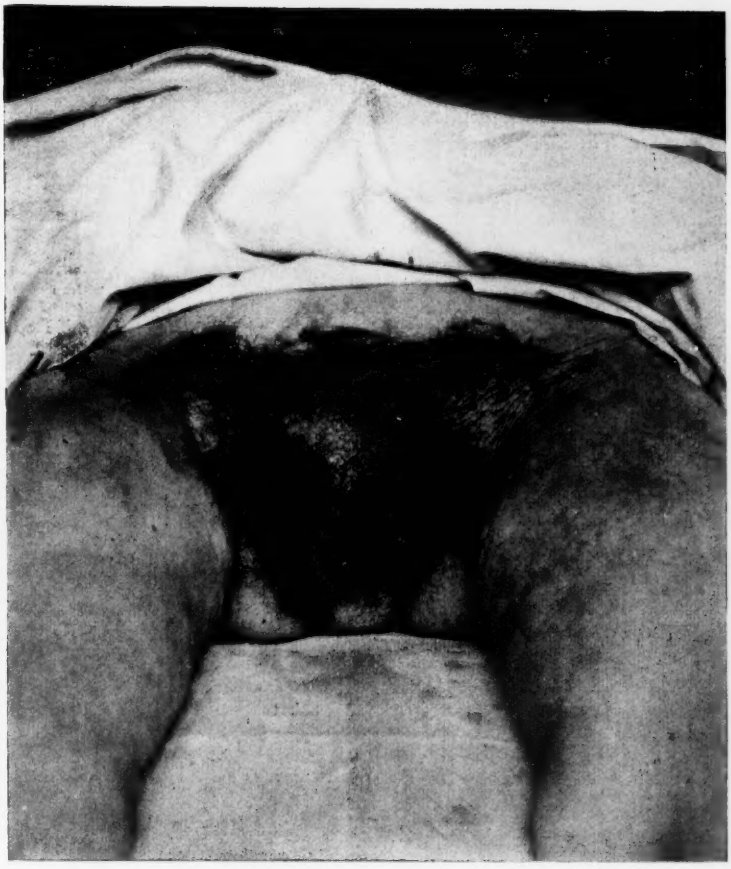
Its position in a primitive condition is between the hind limb-buds and in front of the external cloaca.

As growth proceeds the body-wall behind the allantois becomes more extensive, the pelvic girdles unite in the mid-ventral line, the vulva and anus are developed in the perinæum, and *pari passu* the umbilical attachment is shifted forwards.

Presume now that *no allantois is formed.*

No allantoic diverticulum occurs. No thick mesoblastic stalk is formed for the conveyance of the umbilical vessels. These are carried instead (as in the case previously quoted, Paterson and Emrys-Roberts [2]) to the chorion and placenta in the mesoblastic tissue of the amnion. No umbilical cord is formed. The amnion enfolds the embryo, comes directly into contact with chorion and placenta; the umbilical orifice remains patent, and is closed by the attachment of the amnion, which is continuous with its margin, to the fœtal surface of the placenta.

At the same time, on account of the absence of the allantoic diverticulum, the amnion will exercise a certain traction on the hinder end of the embryo and the terminal postern of the alimentary canal (internal cloaca). No aid will be given on the caudal side towards the closure of the umbilicus. In consequence, the pelvic girdle, although fully formed, is arrested in development, and no symphysis pubis or mons veneris is developed. The formation of the organs connected with the cloaca has gone on in as normal a manner as possible—rectum and anus have developed in the usual way. But by the absence of allantois, on the one hand, no normal bladder is



Lying flat on the back showing the distance between the thighs and breadth between the two trochantes of femora.

produced, and on the other hand, traction of the amnion has favoured the separate connexion of the Müllerian ducts with the external cloaca, and the formation of bilateral bladders and urethræ out of the ventral part of the internal cloaca. Lastly, the umbilical orifice has remained patent, and a pseudo-umbilicus has been formed by the ligature of the body-wall at its junction with the amnion.

It is to be regretted that no information whatever can be obtained of the condition of this case at the time of birth. If the woman had been known to have been born "with a caul" it would have given us a slight clue. At the same time the cause assigned seems to account for the condition. It is probable that the events which occurred to produce the anomaly happened in early embryonic life and that the formation of *two* vulvæ was a secondary event—resulting from the division of the external cloaca into two parts, and the concomitant sub-division of the phallic papilla.

Previous cases. Though cases of double penis have been recorded, we can only find one other authentic instance of double vulva.

This case is that reported by Suppinger,[3] in 1876, of a child who died at the age of twenty-one months. "The pelvis was broad, and the true pelvis divided into two lateral cavities by a peritoneal fold. Each half contained a bladder, a unicornate uterus, with an ovary and a tube, and an intestinum rectum." Each vaginal canal opened into a separate vulva, and there were *two separate coccyges.*

Uterus didelphys, with vagina septa, is the nearest approach to this malformation that we find, of which many instances are recorded; and these vary so much in the extent of non-fusion as to raise various subdivisions, all depending upon the extent and date of the appearance of the causal factor—but all due to the non-union of the Müllerian ducts.

Bladder. Double bladder is rare. Ballantyne refers to several cases,[5] and is of the opinion that most of them have been of the nature of diverticula. In Müller's specimen of a female fœtus there was a double bladder and uterus bicornuis: the two bladder cavities being superior and inferior. In Péan's case, a girl of fifteen, there was an accessory bladder arising from the anterior wall of the other one, from which urine escaped by a second median urethra, lying below the normal meatus urinarius.

Von Bergmann,[6], referring to cases of double bladder, brings forward the view that the allantois, which exists only a short time, is originally double, and that sometimes it persists in double form on account of some difficulty in the fusion of the two halves.

Rose suggests that the etiologic cause of cleft bladder is to be sought in the failure of the vesical ligaments (traumatic separation of the symphysis as a result of a fall of the mother). The bladder, deprived of support, tears open.

In conclusion, we are of opinion that arrest of development of the allantois has been the primary cause of the conditions found in this particular case. We submit that the human allantoic diverticulum is at best a rudimentary structure, compared with that of lower animals; its sole use in the construction of the embryo being in the formation of a part of the urinary bladder.

We see no reason for hypothetical suggestions of infantile peritonitis (Ballantyne [4]) caused by escape of urine into the abdominal cavity (Lockyer [7]).

At the time when the allantois should appear there is no embryo proper, and there are no organs properly developed, and any inflammation at so early a period in development would result in destruction of the ovum.

On the other hand, there is no reason, as this case shows, why, in the absence of an allantoic diverticulum, the processes of development should not go on in a normal manner, with differences dependent on this particular fault.

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EXPLANATION OF FIGURES.

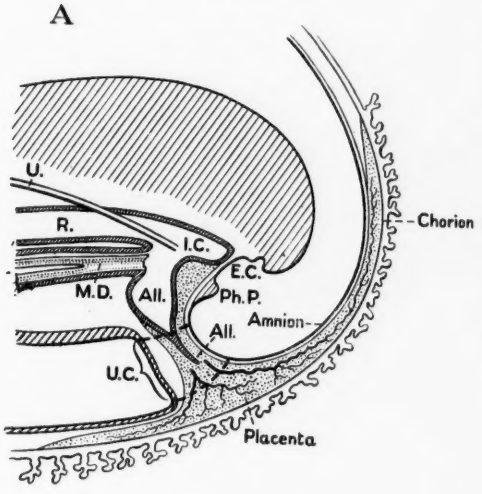
Fig. I. *A. B. C.* Scheme of Normal Transformation of Cloaca and Allantois:— U. Ureter, U. C. Umbilical Cord, R. Rectum, All. Allantois. I. C. Internal Cloaca, Ut. Uterus, E. C. External Cloaca, Va. Vagina, M. D. Fused Mullerian Ducts, Ur. Urethra, Ph. P. Phallic Papilla, Bl. Bladder.

Fig. II. *A. B.* Scheme of changes in Cloaca, in absence of Allantois. References as Fig. I. V. V. Double Vulva. The bilateral bladder is omitted from the diagram for the sake of clearness.

Fig. III. Developmental scheme of the conditions present in this case.

Fig. 1.

A


U.
R.
I.C.
E.C.
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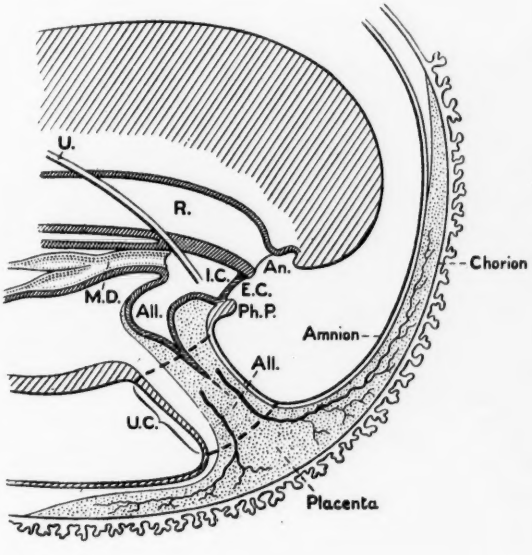
All.
Ph.P.
Amnion
All.
Chorion
U.C.
Placenta

Fig. 1.

B


U.
R.
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Placenta

Fig. I.

C

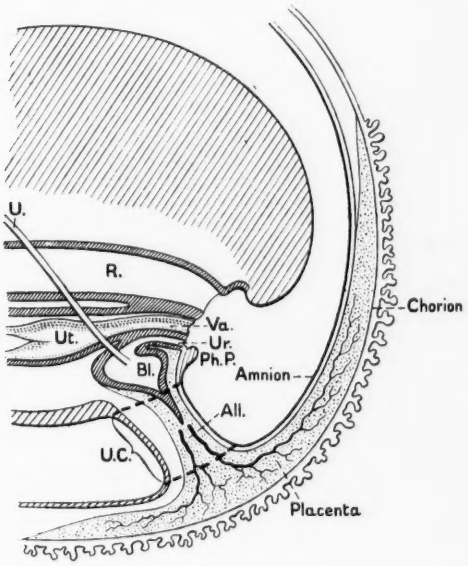


Fig. II.

A

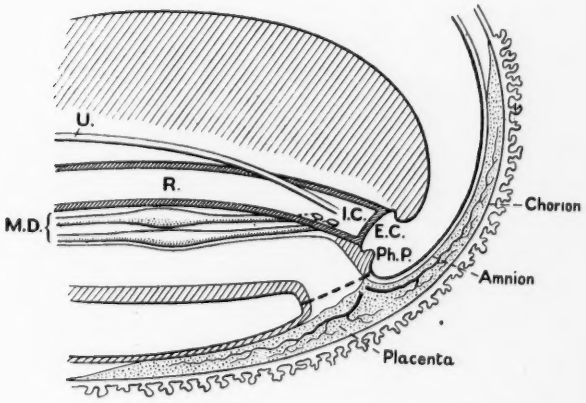


Fig. II.

B

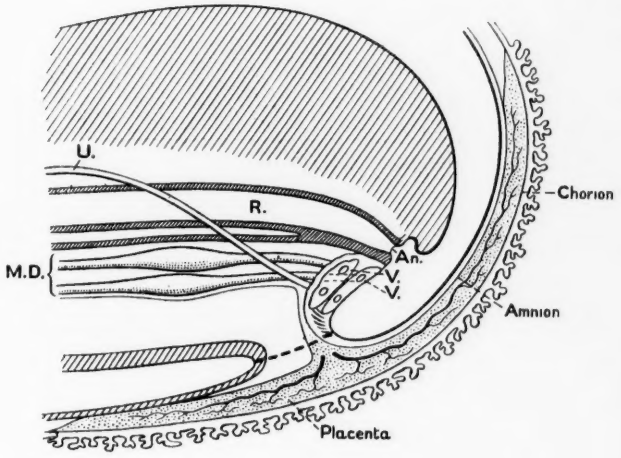
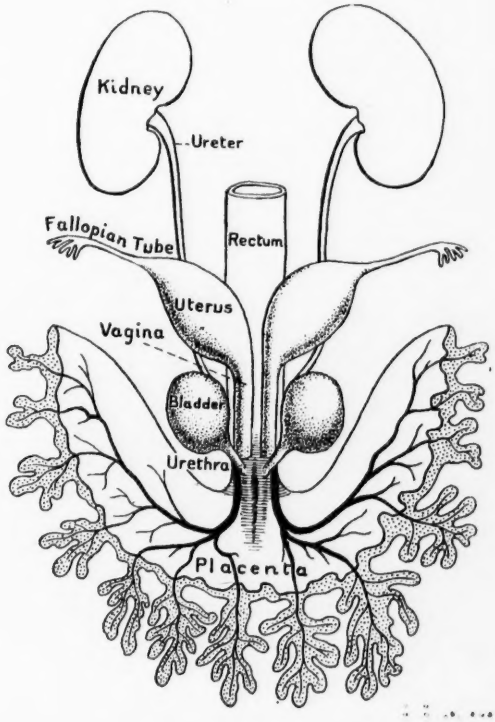


Fig. III.



A Note on Hebosteotomy.*

By A. J. Wallace, M.D.,

Surgeon to the Hospital for Women, and to the Maternity Hospital, Liverpool.

Six years ago (1906) the writer reported two cases of hebosteotomy by the open method (Trans. North of Eng. Obstet. and Gynæcol. Soc., 1906, p. 117). The results of these were by no means such as to encourage repetition of the operation, for the liability to hæmorrhage, the possibility of laceration of hollow viscera and the difficulty of keeping the wound clean subsequently, seemed excellent reasons for preferring Cæsarean section. Nevertheless I felt that in suitable cases an improved technique should render the procedure one of value, and it seemed to me, as the result of the two experiences mentioned, that a suitable case was one in which the pelvic contraction was of moderate degree, and where the addition of another centimetre to the conjugata vera offered with tolerable certainty the delivery of a living child.

The unfavourable results reported year by year from Continental clinics deterred me from making use of the operation even in cases in which its practicability was entertained. There was one exception to this, a case in which the attempt to pass Döderlein's saw-carrying needle failed because the latter was too short to reach the lower border of an unusually deep pubic bone.

In the course of the present year two cases presented themselves in which the necessary conditions for the operation existed, *i.e.*, the degree of pelvic contraction was moderate and yet forcible extraction by forceps implied such pressure on the fœtal head that the birth of a dead child appeared inevitable. The cases are as follows:—

Case I.—Mrs. E. L., aged 25; a primipara at full term: admitted to the Maternity Hospital, March 10 1912. During the pregnancy there had been vomiting daily, and latterly vulvar œdema and albuminuria had been noted.

When called to see the case, the medical attendant recognized a degree of pelvic contraction which seemed to contraindicate delivery *per vias naturales*, and sent the patient by ambulance into hospital.

The pelvis was found to be a generally contracted one with a Cv. of 3 inches. Under anæsthesia, manual exploration ascertained: the cervix fully dilated:

* Based on a paper read before the British Medical Institution, Oct. 24 1912.

an enormous caput covering that portion of the head which projected into the pelvis:

the head lying in the R.O.P. position, with the occiput presenting.

The head was pushed out of the pelvis and rotated into the R.O.A. position, and forceps applied, but without effecting any advance.

In view of the general pelvic contraction, greater than usual at the outlet where there was an immobile coccyx, it was clear that a living child could not be delivered unless the pelvis were enlarged or Cæsarean section performed.

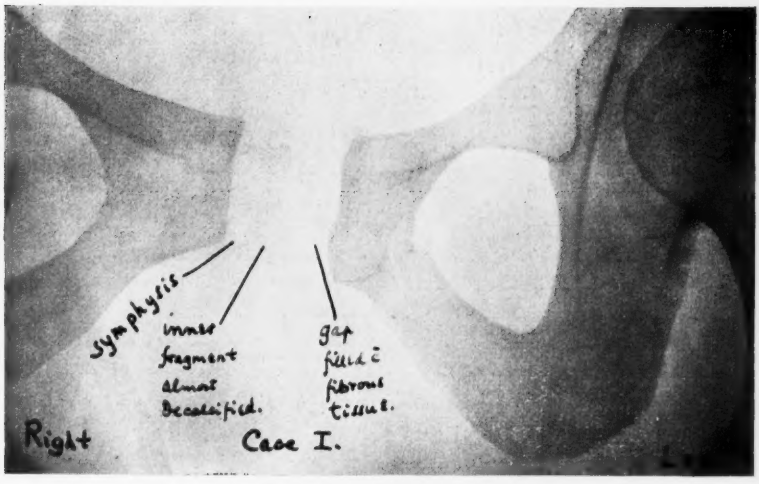
Hebosteotomy was done at once, the divided ends of the bones gaping to the extent of $\frac{3}{4}$ inch. Vaginal examination showed that no damage had been inflicted on the soft parts, so the patient was placed in the lithotomy position, each leg being held by a nurse who also exerted slight pressure against her side of the patient's pelvis. The forceps was applied and the head was easily drawn down into the pelvis, the gap increasing to a full 2 inches. The vulvar opening was small and a right episiotomy was done to preserve the perinæum.

A living female child weighing 7 lbs. was delivered.

Very little bleeding occurred from the small skin incisions for the passage of carrier and saw, nor was there any indication of bleeding in the deeper parts of the wound. Bladder, urethra and vagina were intact.

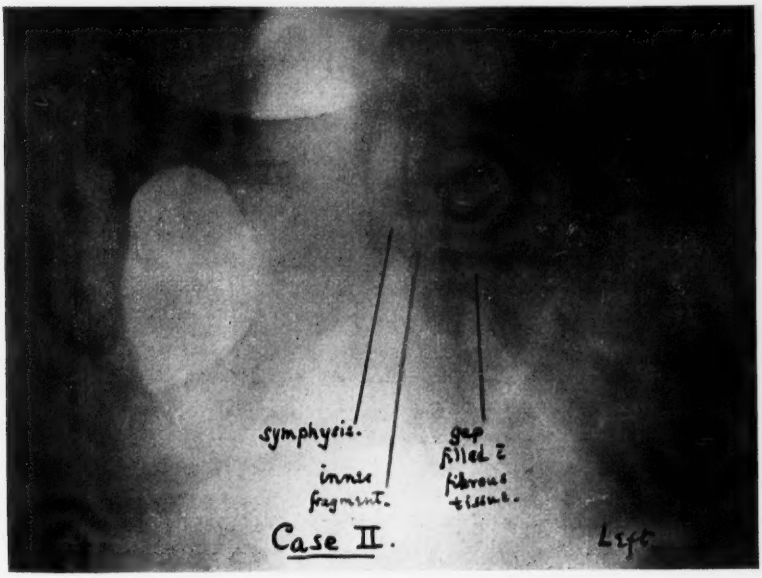
Convalescence was delayed only by soreness of the skin of the left labium majus, due to the too vigorous application of preparatory lotion prior to operation. This confined the patient to bed for seventeen days and was accountable for some slight irregularity of temperature. She was out of bed on the seventeenth day, and two days later walked about in comfort. She left hospital on the 24th day and spent the first five weeks at home resting, getting about gradually. At the end of that time she was perfectly well, and able to perform all her domestic duties.

She was examined a week or two ago when the pelvis was *x*-rayed. On palpation, there appeared to be a gap about rather less than one centimetre wide between the ends of the bones. The external osseous edge was sharply defined, the inner more rounded and less firm. The pelvic girdle was quite rigid and this rigidity did not appear to be affected by the patient's movements. The radiogram of this patient's pelvis shows a condition which is at least unusual. There is an apparent gap of great width between the pubic bones, but close inspection of this gap shows that it is formed of three distinct segments:—(i) in the middle line, the fibro-cartilage of the symphysis pubis; (ii) on the left side of this should appear the inner fragment of the divided left os pubis, but in the radiogram it is practically invisible except for some faint granular markings adja-



CASE I.—Patient lying on her face.

Symphysis. Osteotomy.



CASE II.—Lying face down.

cent to the upper part of the symphysis. Careful inspection enables one to distinguish a faint difference between the area of the invisible inner fragment and (iii) the gap between it and the external fragment of the os pubis. Mr. C. Thurstan Holland, who kindly took the radiogram, considers that the lime salts have been absorbed from the inner fragment. This condition must be unusual, as I have been unable to discover any mention of it. The explanation in all probability will be found in some alteration of the nutritive supply to the inner fragment.

Case II.—Mrs. McC., aged 40: multipara at full term: admitted to the Maternity Hospital Sept. 6 1912. The pregnancy had been uneventful. There had been ten full term deliveries and one abortion. The 1st, 2nd, 4th and 5th labours were terminated naturally: the others were forceps deliveries. Five of the children had died within the first month from, so far as could be gathered, injuries received during labour.

Labour began at 2 a.m. on September 6, the membranes rupturing about the same time. During the day the midwife in charge of the case summoned Dr. H. R. MacIntyre, and he recognized that labour was obstructed and sent the patient into hospital. A well-marked retraction ring was found at the umbilical level, the cervix was fully dilated and the head lay transversely across the pelvic brim with the occiput pointing to the mother's right side. A prominent sacral promontory jutted into a deep dinge in the posterior parietal bone, whilst the right side of the head bulged forwards above the symphysis. The pelvis was a flat one without general contraction, the Cv. being estimated at $3\frac{1}{2}$ inches. The child was alive.

Hebosteotomy was performed through the left pubic bone, and forceps was at once applied. The head came through the pelvis with the greatest ease, the divided bones separating to the extent of $2\frac{1}{2}$ inches. A living male child weighing 8 lbs. 1 oz. was delivered. Very little hæmorrhage occurred from the operation nicks through the skin, and the hollow viscera were intact.

Convalescence was normal. On the 5th day some thrombosis was discovered in a few superficial varicose veins of the legs, but there was no constitutional disturbance. The patient was able to move about in bed from the first: she got up on the 12th day and left hospital on the 15th, quite able to walk and stand. She was seen last when *x*-rayed and was able to get about in the ordinary way.

The child was cyanosed when born and artificial respiration was required to resuscitate it. The head was asymmetrical, the flattened (posterior) right parietal bone showed a dint $\frac{1}{2}$ inch in depth, and there was also a shallower dint on the left parietal, presumably where it had been driven against a pubic bone. A large cephal-

hæmatoma subsequently developed over the right parietal bone. Six weeks after delivery a radiogram of the pelvis was taken. It shewed a well marked gap between the two fragments of the os pubis, and an inner fragment with practically parallel sides, and presenting the usual appearance of normal bone.

At this time the pelvic girdle was quite rigid, and the patient was able to go about in the usual way and make all the ordinary movements without discomfort.

With regard to the performance of the operation, the method adopted was identical in each case. Döderlein's saw carrier was passed through a small nick in the skin midway between symphysis and pubic spine: its point was pushed through the fascial structures of the abdominal wall, and with the help of a finger passed per vaginam, guided along the posterior aspect of the left pubic bone and then forwards round its lower border, when it was made to project against the skin immediately external to the left labium majus. Here a nick was made sufficient to allow the point to protrude for the attachment of a Gigli's wire saw. Exact orientation is not easy especially if the patient be fat, but my endeavour was to keep the saw parallel to the symphysis.

In most diagrams illustrating the performance of the operation the patient is shewn in the lithotomy position, which is undoubtedly convenient both for the operation and the subsequent delivery. But I think the lithotomy position is unsuitable for the actual hebosteotomy because in that position the great adductor muscles of the thighs and the pubo-femoral ligaments of the hip-joints are tensely stretched, with the result that as soon as the bones are divided the sawn surfaces suddenly spring asunder with some violence. As a result serious lacerations of the soft parts may occur quite apart from injuries produced by the passage of the child. Therefore, in the two cases related, hebosteotomy was performed whilst the patient was in the recumbent position with the thighs slightly abducted. After division of the bone the lithotomy position was adopted, a nurse being in charge of each lower limb and also making slight pressure against the great trochanter of her own side. With these precautions it was found that the primary gap was less marked than in cases in which the lithotomy position was used throughout. Probably the use of the Walcher position for hebosteotomy would be still more advantageous and I shall certainly give it a trial in the future.

In both cases immediate extraction with forceps was carried out. In a case that is suitable for the operation I cannot perceive any gain in leaving delivery to the natural powers. To follow the latter course implies with every pain disturbance of the operation field and intermittent compression of injured blood vessels from which fresh

bleeding may occur: therefore I think it is better to apply forceps and at once end the labour.

The Position of Hebosteotomy amongst other Obstetric Operations.

The operation is comparatively new, and in recent years Continental obstetricians have performed it with more zeal than discretion. The statistics obtained at the Dresden klinik may be given as an example of the unfortunate results of its wholesale performance:

(*Roth. Centralb. f. Gyn.*, 1911, p. 362).

83 women were operated upon.

In 85 operations there were 2 maternal deaths = 2·35 per cent. mortality, and 6 children died = 7 per cent. mortality.

Complications during Operation.

Hæmorrhage severe in 13 cases; very severe in 3 cases. Checked in all by compression.

Collapse occurred in 1 case, thought to be due to internal bleeding. The patient recovered very slowly.

Injuries to soft parts.

Vagina: in 10 primiparæ lacerations communicating with the sawn ends of the bone, 19·4 per cent.

In 5 multiparæ lacerations communicating with the sawn ends of the bone, 9·8 per cent.

In 1 case the laceration of the vagina occurred immediately after division of the bone and before delivery was attempted.

Bladder: in 6 cases of severe vaginal lacerations the bladder was also torn.

In 6 cases the bladder only was lacerated.

Sacro-iliac Joints: "slight lesions" of the ligaments were found in isolated instances. In 1 fatal case bilateral suppurative arthritis was found at the necropsy.

In the Puerperium.

The morbidity was raised (the standard is not stated): 48 cases came under this heading = 56·5 per cent. There was severe fever in 20 cases (23·5 per cent.) and thrombophlebitis occurred in 14 per cent.

Subsequent investigation into 38 *patients* (40 operations).

Ten complained of difficulty in locomotion and in working.

Nine complained of pelvic pain due to lesions of the sacro-iliac joints.

In all these 19 the disproportion between head and pelvis had been very marked.

21 had pronounced weakness of the pelvic floor.

In 20 cases subsequent labours were observed.

In 6 cases the subsequent labour was favourably influenced.

In the remainder bony union of the divided bones had occurred so that no advantage accrued in the second labour.

As the results of these experiences hebosteotomy had been excluded as the operation of choice in all primiparæ, *i.e.*, in the Dresden Klinik. Cæsarean section is chosen for such cases. Hebosteotomy is regarded as unsuitable for performance in private houses.

Schläfli and Roemer have between them collected 1,000 cases, and the results are tabulated as follows:—

HEBOSTEOTOMY.

Abstract of Statistics relating to accidents during operation: morbidity and mortality (based on 1000 cases).

	Schläfli[1] (up to 1909). 700 cases investigated.	R. Roemer[2] (1909—1911). 300 cases investigated.
Severe bleeding during operation	78 out of 510 cases = 15·3%	40 out of 228 cases = 15·4%
Fatal hæmorrhage	2 out of 664 cases = 0·3%	1 out of 300 cases = 0·3%
Hæmatomata	87 out of 510 cases = 17·1%	32 out of 228 cases = 14%
Communicating vaginal lacerations	79 out of 510 cases = 15·5%	16 out of 228 cases = 7%
Lacerations of soft parts	91 out of 510 cases = 17·8%	9 out of 228 cases = 3·9%
Of the 79 cases in which communicating vaginal tears occurred, ten died: *mortality*	12·66%	1 death out of 16 cases = 6·25%
In 32 fatal cases communicating vaginal tears were the cause of death in ten	= 31·35%	1 death (reported) = 14·3%
Lacerations of bladder	63 out of 510 cases = 12·35%	12 out of 228 cases = 5·2%
Fever during the puerperium	in 123 cases = 21·8%	in 47 cases = 20·6%
Thrombo-phlebitis	in 42 cases = 8·2%	in 8 cases = 3·5%
Cervico-vesical fistula	1 out of 300 cases = 0·33%	
Vesico-labial fistula	in 2 cases = 0·66%	
MATERNAL MORTALITY	33 deaths out of 510 cases = 4·96%	8 deaths out of 300 cases = 2·66%
MATERNAL MORTALITY, as result of the operation alone	26 deaths out of 510 cases = 4·37%	3 deaths out of 300 cases = 1·7%
Fœtal mortality	64 deaths = 9·6%	20 deaths = 6·66%
Fœtal mortality, deaths dependent on operation alone	61 = 9·18%	15 deaths = 5%

1. Ad. Schläfli. *Zeitschr. f. Geb. u. Gyn.*, 1909, Bd. 64, p. 85.

2. Richard Roemer. *Ibid.*, 1911, Bd. 68, p. 317.

Other sequelæ, too numerous for mention, have been recorded, but there may be noted:—infections of the cellular tissues of the pelvis, infections of bone with sequestrum formation, and in the case of the open operation, hernia through the divided sheath of the rectus muscle.

Were they universal, results so deplorable would require the abandonment of the operation, but fortunately a few obstetricians have not assumed it to be a panacea for every form of pelvic contraction, for instance one of the pioneers, van de Velde, who recently recorded the 14 cases which have taken him ten years to compile, with good results in every instance. The truth is that hebosteotomy has been too widely regarded not only as a competitor with induction of labour, with the high forceps operation and craniotomy, but also with Cæsarean section, and it has been applied in scores of cases for which it was entirely unsuitable.

Cæsarean section eludes mechanical difficulties of all degrees: the aim of hebosteotomy should be to overcome those slighter varieties which are a menace to the life of the child. If mechanical difficulties are encountered after division of bone, then the performance of the operation must be set down as an error of judgment, for success is only obtained when delivery is easily effected, without compression of the fœtal head, without laceration of the mother's soft tissues and without undue distortion of her sacro-iliac joints. A tight fit of the head in the pelvis implies all the risks of the high forceps operation plus injury to the pelvic joints and infection of the severed bone.

The operation has therefore very narrow limits, and it cannot be one of frequent performance. When reporting my two cases in 1906 I stated my belief that it was called for only in those cases in which forcible extraction by forceps promised to result in the delivery of a dead child, but in which the addition of an extra centimetre to the conjugate seemed to give a reasonable chance of delivering a living one. To this opinion I still adhere. It is usually stated that for each centimetre of gap between the severed ends of bone, the Cv. is increased 2 mm., so that a separation of two inches would give the extra centimetre required (2/5 inches). In my limited experience such a separation can be safely effected. It must not be forgotten that all the pelvic diameters are enlarged and that there is consequently a marked increase in the cubic capacity of the pelvis.

In cases of the kind mentioned, where the patient is free from suspicion of infection, and the head lies lowest in the uterus, hebosteotomy will probably survive. But it can never be regarded as a substitute for what Leopold terms "that most elegant of operations"—Cæsarean section.

SELECT CLINICAL REPORTS.

(Under this heading are recorded, singly or in groups, cases to which a special interest attaches either from their unusual character or from being, in a special sense, typical examples of their class.)

Ovarian Gestation.

By Carlton Oldfield, M.D., M.R.C.P., F.R.C.S.,

Honorary Surgeon, Hospital for Women and Children, Leeds.
Demonstrator in Obstetrics and Gynæcology, Leeds University.

Clinical History. The patient was 37 years old; married 12 years; no previous pregnancy nor previous menstrual irregularity; husband circumcised March 1912.

May 1, 1912. She expected her period; it did not come; no pain or trouble of any kind until May 17, when she had a sudden severe, sacral pain lasting 10 or 12 minutes; vaginal discharge, like menstrual fluid in quantity and appearances, followed, and continued for three or four days; no more pain.

June 1, expected period, but it did not come.

June 12 and 14, expected deferred period, but it did not come; patient went to bed because she thought she might be pregnant and wished to avoid an abortion (she thought the pain and discharge on May 17 were due to abortion); she remained in bed, although she had no pain or disturbance of any kind whatsoever.

June 24, while sat up in bed quietly eating her breakfast, she fainted; during the day she fainted again several times and had strange feelings of discomfort across the lower part of chest and adjoining regions of abdomen, but no pain in lower abdomen. Menstrual-like discharge came and continued for 3 or 4 days.

June 26, passed fragments of decidua.

June 28, temperature went up to 101 deg.

June 29, temperature up to 100·5 deg.

July 1, I was asked to see her because she was thought to be septic after an abortion.

Hearing this history I concluded the case was one of extra-uterine pregnancy. On examination I found:—

Physical signs. Per abdomen: Nothing abnormal except resistance at lower part: patient said it was not tender to pressure.

Per vaginam: One finger only admitted; tenderness in left fornix; slight fulness in posterior fornix.

Under anæsthesia: Nothing abnormal made out except that left ovary was a little larger than usual.

Although she had no sign or symptom of extra-uterine pregnancy, I diagnosed that condition from the history alone and operated.

Operation. The abdomen contained dark fluid blood, generally disseminated amongst intestines and in the kidney pouches, but mostly in the pelvis where were also soft friable clots. Amongst these I found a mole.

The left tube and ovary were removed; the right were normal. The patient made an uninterrupted recovery.

THE SPECIMEN (see Drawing I).

The specimen consists of the left ovary and tube (A), and also a mole about the size of a sparrow's egg (B).

The tube is normal, no villi or other sign of pregnancy are to be seen.

The ovary is a little larger than the usual size and presents a saucer-shaped raw surface from which blood oozed at the time of the operation.

Sections of the ovary shew (Drawing II), at the position of the raw surface, innumerable enlarged blood vessels, some extravasated blood and a layer exactly like the blood sinus in an early uterine pregnancy. One villus is shewn in situ and Nitabuch's membrane (layer of fibrin separating fœtal from maternal structures) can be defined nearly the whole way across the surface above mentioned. An oval, compact mass of lutein cells occupy one end of this saucer-shaped depression.

So that there is no doubt it was on this surface that the ovum was implanted.

The mole (B in Drawing I) is a firm mass of blood clot with a small irregular and flattened cavity in the centre.

Under the microscope are seen villi, typical in appearance and well preserved. The amniotic cavity is distorted and compressed, and the villi are seen detached and scattered in the midst of blood clot.

The blastoderm is extruded from the amniotic sac and lies on and is attached to the surface of the mole.

The two chief points I take to be:—

(1) *Clinical.* Extra-uterine pregnancy without a sign or symptom; diagnosis and decision to operate on history alone.

(2) *Histological.* As evidence of site of implantation of ovum it is usually thought necessary to find villi in position. In this specimen apart from the villi, the presence of increased vascularity, the blood sinus, and Nitabuch's membrane, prove that the saucer-shaped surface in the ovary was part of, if not the whole of the gestation sac.

SPECIMEN OF OVARIAN GESTATION. (Drawing I.)

A. OVARY with normal tube attached, shewing raw oozing saucer-shaped depression. (a) Site of implantation of ovum.

B. MOLE cut in two (slice removed from left half for microscoping) shewing :—

(1) Amniotic cavity in centre.
(2) Embryonic rudiment.

SECTION OF OVARY ×5. (Drawing II.)

1. Graafian follicles. 1*a*. Ovum *in situ*. 2. Corpus albacans. 3. Layer of innumerable arteries. 4. Engorged and distended vessels: mostly veins. 5. Nitabuch's membrane. 6. Blood sinus, showing portion of villus. 7. Corpus luteum.

Diverticulitis as a Cause of Pelvic Inflammation with a Short Account of Three Cases.*

By Carlton Oldfield, M.D., M.R.C.P., F.R.C.S.,
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Demonstrator in Obstetrics and Gynæcology, Leeds University.

Disease of the pelvic organs in the female can, as a rule, be diagnosed with accuracy before operation, more particularly if the patient is examined under anæsthesia. By gynæcological surgeons, at any rate, errors in diagnosis are actually not common. Further, I will venture to say, they are less frequent than mistakes in the diagnosis of disease of any other organ or region of the chest and abdomen. The explanation of these facts lies not so much in the skill of the gynæcologist, as in the exceptional facilities for digital and visual examination the pelvic organs offer us. Generally speaking bimanual examinations per vaginam and per rectum allow us to explore digitally every part of the pelvic cavity. By specula, rectal, vaginal and vesical, diseases of some of the pelvic organs can be actually seen. These are advantages enjoyed in no other field of the abdomen and chest.

Yet in spite of these facilities, mistakes cannot be altogether avoided. The rarer diseases of the uterus and its adnexa sometimes puzzle us, but one of the greatest dangers, if not the commonest, is the failure to recognize disease in those pelvic organs that are perhaps of less immediate interest to us, in the rectum, pelvic colon, bladder and ureters. Neither can we afford to ignore the possibility of disease or displacement of some organ not usually or normally lying in the pelvis, notably inflammatory disease of the appendix. Perhaps the most serious mistakes, if not the most frequent, arise from overlooking malignant disease of the rectum or pelvic colon and kidney disease which produces chiefly or solely pelvic symptoms. A less common condition, diverticulitis, I wish to bring to your notice to-day.

It occurs most often in the pelvic colon, although it is found occasionally in other parts of the colon. It is an inflammatory disease, taking various forms, in connection with small pockets or saccules which arise in the large intestine. These pockets vary in size from a pea to a cherry; they are usually multiple and often numerous. They may be found in any part of the circumference of

* Read at a Meeting of the North of England Obstetrical Society, on March 15, 1912.

the gut, but most frequently enclosed in the epiplooic appendages and in the sigmoid mesentery. On dissection they prove to be hernias of the mucosa through the muscular wall of the bowel. (Fig. 1.)

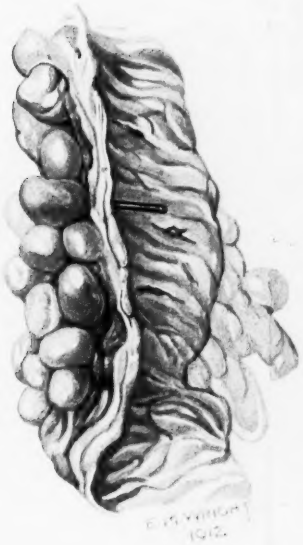
It is not difficult to imagine how these abnormal structures can give rise to inflammatory disease. They can be regarded as multiple vermiform appendices, short and thin-walled, and existing in that portion of the large intestine where fæces are normally retained until just before the time for their evacuation. The presence in these pockets, of concretions or foreign bodies will readily cause ulceration, so that inflammatory disease may develop as in the appendix under similar circumstances, and like appendicitis this disease, diverticulitis, may take various forms and have various complications. In this short communication I do not wish to dwell on the pathology more than just to indicate the essential nature of the condition. Its chief importance to us gynæcological surgeons depends on the fact that it causes pelvic inflammation, acute, subacute and chronic, suppurative and non-suppurative. Seeing that it is not a very rare condition, it must be taken into account in investigating and in operating upon cases of pelvic inflammation, and of the small pelvic tumour. It is more particularly in pelvic operations that we need to bear in mind this disease, for separation of adhesions, which commonly occur in connection with it, often result in infection of the peritoneum with sometimes fatal results.

My first case exemplifies this danger.

M.L., æt. 55. Admitted under my care into the Women and Children's Hospital at Leeds in May 1911, for the treatment of genital prolapse. She complained of dysuria, chronic constipation, and pain in the left iliac region.

She looked ill, and was strangely quiet and morose. No heart, lung, kidney or liver disease could be detected by my house surgeon, but the woman seemed to me from her aspect to be an unsuitable patient for an operation.

On examination there was a cystocele and a small tender ill-defined tumour in the left posterior quadrant of the pelvis. I decided to observe her for a while before doing anything, but she was anxious to get home to her children and I was induced to operate four days after admission. I intended to do a vaginal fixation and to remove the small inflammatory tumour, which I took to be adnexal, per vaginam. After removal of redundant vaginal mucosa, and separation and replacement of the bladder, the vesico-uterine pouch of the peritoneum was opened and the inflammatory mass separated from the top of the uterus, and to some extent from the back of the uterus. I soon arrived at a stage in this process, when I felt that to proceed further in the dark, as I was operating by the



SPECIMEN OF DIVERTICULA OF SIGMOID.

The bowel has been laid open. The drawing gives a side view, showing numerous projecting diverticula on the left: a small glass rod inserted into one of them is shewn lying on the mucosa: near to the rod is seen the opening of a diverticulum: the orifices of two others (one above and the other below it) are also seen. The diverticula are distended by cotton wool packed into them through their openings into the lumen of the bowel.

vagina, would be dangerous, so I rapidly completed the plastic operation, doing an ordinary anterior colporrhaphy and a posterior colpo-perineorrhaphy, placed the patient in the Trendelenburg position and opened the abdomen in the ordinary way. There was much blood about, and the normal features of the viscera of the lower abdomen were obscured by inflammatory swelling and adhesions. After further separation of adhesions and investigation, I found that although the left appendages were involved in the inflammatory mass they were obviously not the chief seat or origin of it, but that the pelvic colon was the organ chiefly involved. The patient, ill to begin with, by this time had become almost pulseless, and I could not proceed any further, so I closed the abdomen. She died seven days later with general peritonitis.

No pus had been seen; no opening in the bowel.

At the post mortem the left tube was adherent to a large mass in front, which was found to be pelvic colon, the wall of which was immensely thickened by chronic peritonitis and peri-sigmoiditis; in the lumen were several small ulcers and many whitish submucous nodules. Liver pale and enlarged; typical sago spleen; kidney pale (tinned-tongue appearance).

This case illustrates the danger of separation of the inflammatory mass in association with diverticulitis, and from published reports it appears that the development of fatal peritonitis after operations in this disease is quite a common happening. (Mummery, "Diseases of Colon," p. 187.)

My trouble in this case is the chief reason for calling attention to the disease.

Dr. Donald has given us a lead by bringing before the society during the last year or two, some of his failures, and if we could more often follow him in this respect, our deliberations at these meetings would not lose in usefulness and interest.

It was the first and it is the only death I have had in 165 operations for genital prolapse, and teaches one not only to be on the look-out for complicating conditions, but to exercise care in the choice of the patient to be operated upon.

Other lesions that result from diverticulitis are:—

(1) *Perforative peritonitis*, of which I have had one case diagnosed before operation. (I will give details later.)

(2) *Intestinal obstruction* (usually chronic becoming acute), of more interest to general surgeons than to us. Of this, I have seen one case and perhaps two. Six years ago I helped Mr. Moynihan with an operation associated with obstruction. He resected a mass in transverse colon with most of great omentum. On investigation of the specimen there was no malignancy, though the mass looked very like it. Mr. Moynihan reported the case along with five others

under the title of "Mimicry of carcinoma of intestine by inflammatory disease." (*Lancet*, Dec. 22, 1906, p. 1725, Case 3.)

The other case I had at the Women and Children's Hospital last summer. The patient had acute obstruction caused by a band stretching across the pelvic colon to a fibroid. I divided the band with difficulty in the depths of the pelvis, and brought the sigmoid with the stump attached to the surface. The band proved to be an epiplooic appendage. Tuttle records a similar case, and says the band is due to epiploitis from a diverticulum.

(3) *Fistula from the bowel*, usually sigmoid, to bladder or on to the surface of the body.

Perhaps members of the society may be able to carry their minds back to cases of the distressing condition of fistula between the intestine and bladder, and wonder whether they were really cases of malignant disease as is usually supposed. When due to diverticulitis, and investigators say they usually are, the cases are amenable to surgical treatment, and I know of two successful cases.

With regard to perforative peritonitis, we are all sometimes deliberately and at other times accidentally called upon to operate for this serious condition, and it is well to remember that diverticulitis may be the cause, particularly when the symptoms point to the origin being on the left side of the pelvis.

Mrs. S., aged 35, I saw in June 1911.

History: always constipated; usually a rapid pulse; a similar attack three years ago. Five days ago commenced with symptoms like acute appendicitis, except that the pain was on the left side instead of the right. Vomiting at first and bowels could not be moved, although enemata and strong purgatives of various kinds were given and repeated several times. Temperature 100 deg.

On fourth day of attack bowels moved, but pain continued, and pulse became more rapid; diarrhœa then set in and patient looked ill and toxæmic.

On examination of abdomen there was resistance and tenderness in left iliac fossa.

Per vaginam. Tenderness in posterior and left fornices, and an ill-defined and very tender something to be felt high up in left and posterior part of pelvic cavity.

Per rectum. The same features were observed: the condition was diagnosed "acute diverticulitis," and the patient removed to a nursing home.

Next morning patient better; temperature down; pulse remained rapid; I decided to wait. In the evening she was rather better still, and the same next morning. Case transferred to care of practitioner.

Four days later I was asked to see her again; she had had two

rigors; there were rapid pulse, more pain and tenderness. I decided to wait no longer.

Operation. Abdomen opened in mid-line. Omentum blocked entrance to pelvis, whence one evacuated about a pint of pus; found a mass in position of sigmoid; drainage suprapubically and through vagina. Fæcal material on following day washed through by the continuous saline; *we found that immediately after injecting saline into rectum it appeared at the suprapubic wound;* fæcal discharge continued for ten or twelve weeks, when the sinus healed. Patient is now well.

This case then is an example of acute pelvic peritonitis due to perforation of the bowel, and most probably of a sigmoid diverticulum.

The commonest result of diverticulitis is the formation of local abscess. Of this condition I had an example in September last.

Mrs. A.C., æt. 42, sent to me by the late Professor Trevelyan through Dr. Kelly, of Leeds. She complained of pain in the left iliac region and dysuria of a week's duration. No vomiting; bowels opened just before admission. On examination abdomen full and resisting. On the left side at lower part of abdomen is a distinct lump which is very tender to touch. Patient holds herself rigid and it is rather difficult to make a satisfactory examination.

Per vaginam. Slight cystocele and rectocele. Cervix raised to level of upper border of symphysis, and displaced forwards nearly to this position. The posterior lip is soft and moveable. The anterior lip is hard and fixed.

In posterior fornix is a slight general fulness, but no mass; marked tenderness in posterior and left lateral fornices. Diagnosis could not be made.

Operation, Sept. 8 1911. After dividing adherent omentum one felt a large mass between left broad ligament and the loin. Separating adhesions towards the pelvis we soon came upon pus, and about 8 oz. were mopped away; the fingers could now be passed into pelvis behind uterus, and eventually *the mass extending from rectum in Douglas's pouch to iliac crest in the loin* was loosened and brought to the surface. It was as thick as the upper part of one's forearm, and of about the same consistency, gradually narrowing towards rectum below and descending colon above. It was rounded in outline. The surface oozed freely, was deeply injected and the appendices epiplooicæ, which usually are discrete and show up well, were lost in the general inflammatory mass.

It was obviously an acute sigmoiditis and not suitable for resection, so the mass was returned and drainage tubes inserted both suprapubically and through posterior fornix of vagina.

The patient was very ill, but soon rallied and got well. I saw

her in November and showed her at the Leeds and West Riding Medico-Chirurgical Society. She was free from local symptoms, but said she was weakly. There was a small ill-defined and rather tender mass to be felt in left iliac fossa.

In the absence of local symptoms I do not feel inclined to advise further interference, but resection of the length of intestine involved would be the ideal treatment.

Although not strictly a gynæcological condition, I have ventured to call attention to this disease not only because I think it is by no means rare as a cause of pelvic inflammation, and as an explanation of the left iliac tumour and pain, but because so far as I have observed, it has not been mentioned in gynæcological text-books or periodicals.

Since reading this paper I have found that the February number of the *Journal of Obstetrics and Gynæcology of the British Empire*, p. 98, contains a synopsis of a paper.

REVIEWS OF CURRENT LITERATURE.

UNDER CHARGE OF EARDLEY HOLLAND, M.D.

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CHELTENHAM. C. J. N. Longridge, M.D.

OBSTETRICS.

Experimental Research on the Resistance of the Umbilical Cord and its Blood Vessels.

GENTILI (*Annali di Ostetricia*, November 1912) describes experiments made to determine the resistance of the umbilical cords and the walls of its blood-vessels, considering both in relation to so-called precipitate labour. The methods he adopted were—(1) estimation of the force of resistance to gradual and violent traction (*a*) when the cord was in a recent state, (*b*) after its vessels were injected with salt solution at 37°C., (*c*) after it had been dried in air or immersed in water for varying periods of time; and (2) measurement and comparison of the elastic resistance of its arteries and veins. He found that from a medico-legal point of view, the factors of most importance in precipitate labour are the structure of the maternal pelvis and the resistance of the cord. The average resistance under gradual traction is about 5,900 grms. weight. The minimum is about 3,000. Cords obtained from syphilitic women are the most fragile, breaking under slow traction with a weight of 2,500 grms. This diminished resistance is due to degeneration of the elastic tissue of the blood-vessels. Resistance to sudden traction varies from 200—1,000 gms. The average resistance is about 525 gms. With injected vessels resistance varies from 2,200—7,900 gms. Resistance to traction of cords exposed to air varies directly as a curve corresponding to increases in the times of exposure of the cord. In cords immersed in water resistance may be indicated by a curve inversely proportional to the times of immersion of the cord in water. The average pressure necessary to obtain rupture of the walls of the umbilical arteries was 680 mm. mercury, as compared with a pressure of 580 mm. on the walls of the veins. Turning to clinical experience, it may be affirmed that if the normal blood pressure

be sufficient to overcome the pressure of the vessel walls either in premature or normal births, there must be grave changes at some points of the vessel walls. Even in exceptional cases, pressure necessary to rupture the vessels was 100 mm. greater than that which would be exerted by the blood flowing normally in the umbilical vessels. J.H.F.

Early Rising after Labour.

Bouffe de Saint-Blaise (*La Gynécol.*, Nov. 1912) draws no conclusions in his contribution of observations in the Tenon maternity service. He mentions that those who recommend early rising exclude from this treatment various categories, such as difficult labours, artificial third stage, cardiac cases, women who had previously suffered from prolapse, and so on. He proceeds to give details of 495 women, 221 1-paras and 274 multiparas delivered during five months. In that year there were 1,265 women delivered without a death from septicæmia, so the general morbidity may be considered as not above the average.

Of these 495 women, 18 were affected by tuberculosis or other general disease; 21 had previously suffered from prolapse or other uterine or appendix trouble; 114 had very lax tissues; 27 had been subjected to severe operation for dystocia or had badly torn perineums; 3 had suffered from severe hæmorrhage during labour; 21 had a febrile puerperium.

That is, of 495 women, 204 were abnormal, while of the remaining 291, no less than 260 had their uterus palpable from 4 to 9 cm. above the symphysis when examined on the 9th or 10th day. Of the remaining 31, 4 had retroversions and 12 still had well-marked sanguineous lochia. The tables given are so badly misprinted as to be difficult of decipherment.

E.H.L.O.

Puerperal Phlebites.

Jeannin, Vanverts and Paucot (*Arch. Mens. d'Obst. et de Gynécol.*, Nov. 1912) presented to the Société Obstét. de France a report on the various forms of phlebitis in puerperal women. They discuss the subject under the following heads—I. Pathogenesis, and II. Symptomatology. Historically there is an anatomical and clinical disease tractable on surgical lines. Under pathogenesis they divide the etiological factors as they occur in physiological or pathological conditions of the pregnancy, labour and puerperium. Conditions common to all the physiological phases are the slowing of the circulation, modifications of the blood such as lowered density, increase of plasma, increase of fibrine near term and of lime, increase in number of leucocytes and their destruction. Conditions peculiar to pregnancy, mechanical, toxic, infective. Conditions peculiar to labour, traumatism, dilaceration of the epithelium of the sinuses in the third stage. Conditions post partum, microbes, serum in the uterine cavity. Conditions peculiar to pathological three phases in common, slowing of circulation, modifications of blood, as before but in higher degree. Pathological pregnancy, mechanical, toxic, infective; labour especially 3rd stage; abortion, hydatid mole; post partum, muscular atony, endometrial infection. Hæmorrhages; abnormally inserted placenta. Mechanism of phlebitis; aseptic and septic forms of a thrombosis; physiological thrombosis in the uterine veins, pathological atonic thrombosis. Septic thrombosis in pregnancy and in post partum state. Phlegmasia alba dolens.

II. *Symptoms.* Atonic or aseptic thrombo-phlebitis with quick pulse,

often large fatal embolism resulting. Infective: utero-pelvic, simple or adhesive in pregnancy or puerperium, temperature, rigors, pulse, meteorism, pain, thoracic symptoms; clinical appreciation of its extent. Generalized venous infection, septicæmic and pyæmic types. Local thrombo-phlebitis not in the genital area; phelgmasia alba dolens, especially that of embolic origin; double phlebitis, phlebitis of septicæmia, latent phlebitis. Phlebitis other than those of lower extremity very grave in arms but rare; common characters of these forms.

The authors conclude that infection is far from playing an exclusive part. Thrombosis may occur without infection, and even when infection is the chief factor humoral modifications determine the coagulations to a large extent. Clinically between phlegmasia a.d. and pyæmia we must recognize a utero-pelvic simple or an adhesive utero-phlebitis. This limited form deserves careful study for it might be termed operable. E.H.L.O.

GYNÆCOLOGY.

Treatment of Sterile Women.

Funck-Brentano and Plauchu (*La Gynécol.*, Nov. 1912) continue their paper and pass on to consider sterility due to causes in the uterus. The authors do not believe that the sperm is ever injected directly into the uterus nor that it is mechanically sucked in by movements of the uterus itself.

Malformations such as bicornute uterus do not tend to sterility unless accompanied by aplasia, but aplasia and hypoplasia (infantile uterus) are common causes, say in 2·75 per cent. of gynæcological patients. This may be curable in certain cases, but if accompanied by aplasia of the ovaries the treatment is not hopeful.

Flexions and stenosis of the external and internal os are discussed at length and the experiments of Runge are quoted: these were made on a series of sixty-six women to determine whether in certain cases the spermatozoids were unable to pass to the uterus. The figures are interesting and show that in the sterile women observed the speramatozoids were often not found in the posterior fornix six hours after coitus as they are in fertile women, presumably from premature expulsion. Similarly examinations made 12 and 36 hours after intercourse showed that in sterile women the spermatozoids were comparatively rarely found in the cervix and uterus respectively.

The authors conclude, from a study of cervical sterility, that the explanation is to be found in no one anatomical condition, but on several, stenosis, elongation, conical shape, abnormal direction: dysmenorrhœa is not so much a cause of sterility as a concomitant symptom probably due to the same cause as the sterility.

Septic inflammatory infections cause sterility probably in various ways hitherto inadequately explained, often no doubt from the disease having spread to the adnexa.

Deviations and malpositions again probably cause sterility from the reaction on the appendages.

Uterine tumours occasionally cause sterility, as in the case of mucous polypi; many do so doubtfully as fibroids which some writers believe to

be a consequence of the sterility, but of course many women with fibroids become pregnant and a few even with cancer of the cervix.

The treatment of these various conditions is detailed at considerable length. In particular that of the infantile uterus with or without stenosis is given on the lines advocated by Pinard; that is, dilatation for a week with graduated tangle tents (laminaria) followed up by bougies. Successful cases are quoted where women have become pregnant after or even while wearing intrauterine stems, but the authors do not approve. Various operations are described for enlarging the calibre or for straightening the cervix, and are discussed in detail. For retro-deviations intra-abdominal shortening of the round ligaments is advocated, and for adhesions *massage* is suggested along with hydrotherapeutics if pessaries have failed. Metritis and endometritis are to be best treated by progressive cauterization of the interior of the cervix on the lines laid down by Richelot.

Artificial insemination had fallen into discredit when the extraordinary results obtained by Iwanoff in domestic animals re-opened the subject. Dœderlein obtained various successes, and lately Hirsch claims to have improved the technique. Iwanoff found he could dilute the semen with saline solution, but Hirsch got the best results with not more than two drops of pure seminal fluid and warns that the spermatozoids are as quickly destroyed with undue heat as with cold. The authors conclude that artificial insemination is yet on its trial. E.H.L.O.

Sterility with Reference to Anomalous Development of the Uterus.

L. Funk-Brentano and E. Plauchu (*Revue men. de Gyn. d'Obst. et de Ped.*, Nov. 1912) consider the question of sterility due to anomalies in the development of the uterus in the following groups of cases:—

1. Sterility due to mal-union of the Müllerian ducts is sometimes found to exist, but it is also quite common to find in cases presenting such developmental anomalies that, if ovulation occurs, impregnation may follow.

2. Arrested development of the uterus in cases where the usual Müllerian fusion has occurred, leaves such conditions as the fœtal, the infantile, and the uterus of puberty of Puech. Neumann estimates that these conditions occur in about 2·7 per cent. of cases seeking gynæcological advice and, in them, sterility is usual though this may also be due as Pinard points out, to defective ovulation and irregular menstruation.

3. Cervical obstacles. Stenoses and flexions. Some authorities have claimed these as the principal causes of sterility. In 1842, Lisfranc stated that a conical cervix and pin-hole os caused sterility in 19 cases out of 20. Later on, Marion Sims upheld this doctrine and gave his figures as 85 per cent. Nowadays such a proportion is certainly considered too high, but there is no doubt that the shape of the cervix, its direction, and narrowing of its orifices play a rôle in preventing conception. The favourable results of plastic operations puts this question in a definitely settled position.

The researches of Runge were made to establish the varying lengths of time at which spermatozoa could be recovered from the vaginal fornix, the cervical canal and the uterine cavity after coitus in multiparæ and in women apparently sterile. The examinations for spermatozoa were made at 6, 12, and 36 hours after intercourse. The semen was carefully recovered by means of a Braun's syringe. The investigations were made on 66 women who, although married at least 2½ years, had not been impregnated, and on

17 women who had already been previously confined. In the first group he was not able to find spermatozoa in 51 per cent. of the cases, and in the second in 17 per cent. Classifying the cases where it was not possible to find spermatozoa the figures are :—

	Sterile and	Parous Women.
At the level of the posterior fornix	77·7 per cent.	25 per cent.
At the level of the cervical canal ...	74 per cent.	37 per cent.
At the level of the uterine cavity ...	88 per cent.	40 per cent.

With regard to the length of time after coitus that he was unable to find spermatozoa, his figures after six hours show no spermatozoa :—

	Sterile and	Parous Women.
At the level of the posterior fornix	56 per cent.	0 per cent.
At the level of the cervical canal ...	62 per cent.	14 per cent.
At the level of the uterine cavity ...	78 per cent.	0 per cent.

12 hours after :—

At the level of the posterior fornix	82 per cent.	23 per cent.
At the level of the cervical canal ...	80 per cent.	30 per cent.
At the level of the uterine cavity ...	93 per cent.	23 per cent.

36 hours after :—

At the level of the posterior fornix	95 per cent.	25 per cent.
At the level of the cervical canal ...	100 per cent.	37 per cent.
At the level of the uterine cavity ...	91 per cent.	75 per cent.

With all these figures there results one constant feature, that the presence of spermatozoa has been found less often in sterile women than in those that have already been pregnant. Another feature is that in parous women all had spermatozoa in the vagina 6 hours after intercourse.

Runge concludes his researches by stating that he considers the two chief factors in determining sterility in these types of cases to be (1) narrowing of the cervical canal, and (2) the rapid escape of semen from the vagina.

The authors of this paper consider Runge's work of importance because, according as spermatozoa are found in the posterior fornix, cervical canal, or cavity of the uterus, one is able to determine the site of opposition to the ascent of the sperms and the appropriate treatment of it. This opposition may be due to too small an external os, to narrowing of the cervical canal, especially when due to abnormal flexions causing the two walls to be abnormally approximated, to too small an internal os, and to plugging of the cervical canal by thick mucus which may be due to endometritis caused by the narrowing. They admit the justice, however, of Bumm's contention that the opposition to ascent is not solely mechanical, as there is always a passage larger than the uterine ostium of the Fallopian tube.

Retroflexion, too, must have an added condition in that the external os does not lie in the pool of semen deposited in the posterior fornix, but is often so placed that it abuts against the anterior vaginal wall which would also prevent ingress of sperms. Lastly, they agree with Chrobak, that retroflexion of congenital origin may be a cause of sterility in not allowing either fornix to develop sufficiently and so causing the semen to be thrown out of the vagina immediately after coitus.

The Transplantation of Wolffian Bodies.

DECIO (*Annali di Ostetricia*, November 1912) refers to experiments on the transplantation of embryonic tissue to verify Cohnheim's hypothesis on the origin of tumours, and describes his own experiments in transferring the Wolffian body along with pieces of adjacent tissue from one guinea-pig to another. Briefly summing up the results of his work, he concludes that the Wolffian body, transplanted into subcutaneous tissue or introduced into a fold of the broad ligament, adapts itself with the greatest ease to its new site, and preserves its vitality for months. Signs of this—in some cases—exuberant vitality are often revealed by proliferation of the epithelium or in abnormal development of the muscular tissue of the body. Often true cysts are formed which are perfectly identical in structure with meso-nephric cysts observed in human pathology, and other pathologic forms, such as fibroma, myoma, and adenomyoma are found to occur.

J.H.F.

The Complement Fixation Test in the Diagnosis of Gonococcus Infections.

H. J. SCHWARTZ and A. MCNEIL (*Amer. Journ. Med. Sciences*, Dec. 1912, p. 815) give a further account of their researches in this subject. The article is chiefly confined to gonococcus infections in the male since the test can be carried out much more satisfactorily in the male as the development of a gonococcus infection is so much more easily studied in that sex.

It is a well-known fact that it is not easy to diagnose with certainty every case of gonococcus infection in the female simply by bacteriological examination of the discharge except in acute cases. In chronic cases the gonococci are so scanty that they may easily be overlooked.

Limitations of the test. In order to obtain a positive reaction it is essential that the cervix or parts above this structure should be involved. For if the infection is limited to the vagina, Bartholin's, Skene's ducts and the urethra the reaction is likely to be negative except where there is abscess formation. In bacteriologically proved gonococcal vulvo-vaginitis of children the reaction was negative in ten cases.

The authors consider that the chief value of the test will be found in doubtful inflammatory lesions in the pelvis, and especially in cervical discharges during pregnancy as the certain diagnosis of the specific nature of such a discharge would be a long step in the prevention of gonorrhœal ophthalmia. The technique of the test is described and the results set out in tabular form.

J.A.W.

REPORTS OF SOCIETIES.

THE MIDLAND OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.

First Ordinary Meeting held at the Medical Institute, Birmingham.

October 24 1912.

The Vice-President, Mr. CHRISTOPHER MARTIN, in the Chair.

The first part of the meeting was devoted to a discussion upon the Rules submitted by the Council for the government of the Society.

Mr. Christopher Martin contended that the existing title, viz., " The Midland and Western Counties' Obstetrical and Gynæcological Society " was too long and cumbersome, and proposed that it should be substituted by " The Midland Obstetrical and Gynæcological Society."

It was resolved to accept Mr. Martin's proposal, and the new title was embodied in the Rules.

It was decided to admit all registered practitioners as members of the Society, and to fix the annual subscription at 5/-. There will be no entrance fee. The ordinary meetings will be held on the first Tuesday of each month in October, December, January, March and April, at 4-30 p.m. For the current session the following centres have been selected at which to hold meetings :—Birmingham, Bristol, and Leicester.

The proceedings at each ordinary meeting will consist in the exhibition of living cases, specimens and instruments, and the reading and discussion of " short communications " and papers. No paper which has been read previously at another society or published in a journal will be accepted for reading before the Society.

Dr. Beckwith Whitehouse submitted a scheme received from the Editorial Committee of the *Journal of Obstetrics and Gynæcology of the British Empire* for the publication of all the Society's proceedings in that Journal. It was resolved to accept the offer made by the *Journal of Obstetrics and Gynæcology of the British Empire.*

After some discussion, it was agreed to publish a volume of Transactions, and Messrs. Sherratt and Hughes' tender, through the *Journal of Obstetrics and Gynæcology of the British Empire,* was accepted for one year.

The following members, nominated by the Council, were unanimously elected to serve on the Council for the Session 1912–13. Mr. J. Furneaux Jordan, Dr. Frederick Edge and Dr. Ewen J. Maclean.

The following gentlemen were elected members of the Society:—J. Attridge Williams, M.D., F. Bolton Carter, F.R.C.S., Cecil Marriott, M.D., F.R.C.S., Guy J. Branson, M.D., C. H. Harcourt, M.B., E. Wilson Hird, M.R.C.S., W. H. Pollard, M.B., A. M. Nevin, M.B., and Jas. Eddy, M.R.C.S.

The PRESIDENT (Dr. MALINS) then delivered his Presidential Address upon

SOME POINTS IN A SHORT REVIEW OF OBSTETRICS AND GYNÆCOLOGY, 1887—1912.

He began by congratulating those who had joined the new Society, and observed that it was starting upon a broad democratic basis, free from constraints and apart from the trammels of custom and tradition. At this inaugural meeting it was not easy to find a fitting theme upon which to address the members. However, he was in the position and had the satisfaction of being able to review the past and to make a comparison with the present. In doing so he noted that there was one characteristic which stood out with more insistence than others, and this was the indisputable fact that there is no finality in knowledge.

The search for truth is ever a quest of endeavour and patient persistence. During the quarter of a century that he had been engaged in the special department for women at the General Hospital, Birmingham, there had been several examples of the text to which he had alluded, viz., the gradual evolution of discoveries and the discernment of those who have so aptly made use of them to the practical benefit of humanity at large.

Perhaps in no direction has modern advance been more strongly marked than in the explanation of puerperal infections.

Dr. Malins then referred to the life and writings of Semmelweis, Pasteur, Lister, Oliver Wendell Holmes and other pioneers in the march of progress. That the latter is still being maintained is shown by the returns of the Registrar-General. In the last available report (1910) the deaths referred to " puerperal fever " (161) is 29 below that in 1909, and compares with 478 so recently as 1901. For a large share in this improvement we are indebted to the Midwives Act and the formation of the Central Midwives Board. The influence of this body in the training and supervision of midwives may be regarded as one of the greatest social reforms of our age. Furthermore, the conviction that puerperal infection is a preventable complication has steadily become incorporated in the practice of midwifery. The rules that should guide modern conduct are few and easily remembered, viz., that vaginal examinations are very seldom necessary; the size and shape of the pelvis, the position and movements of the child in the great majority of cases can be determined by external examination; all tears should be repaired at once, all douches avoided, and, lastly, the constant use of rubber gloves, kept for this purpose only. He would like to see maternity homes established for women to enter for the purpose of confinement only. Such homes might be under municipal control, or they might be of private enterprise, registered, applicable to all classes of society on graded payments, according to social position and accommodation required.

The President then referred to the advances made in the operation of Cæsarean section. He traced the history of the operation, and quoted from Dr. Barnes's work on Obstetric Operations (1870) and from Dr. Amand

Routh's valuable monograph, dealing with all cases of Cæsarean section operated upon by obstetricians and gynæcologists living on June 1 1910.

There were many subjects, however, still waiting for further elucidation. Thus the reports of the Registrar-General show that during the past 14 years (1897—1911) the death-rate from cancer among women is increasing greatly. Whilst cancer of the uterus has shown little or no increase during this period, the mortality from mammary cancer has increased by 29 per cent. Again, the death-rate attributed to cancer of the intestines has been practically doubled during the past 14 years.

Reference was also made to the modern methods of restoring displacements of the uterus. The ingenious and skilful plans now adopted contrast strongly with the mechanical methods of former years.

He thought that we are upon the threshold of many important discoveries, more particularly in the influence of the thyroid and parathyroid glands on pregnancy, the menopause and associated conditions. Other aspects of knowledge full of interest are the significance of lutein cells, the possibilities of sera and vaccines in the diseases of women and the bearing of ante-natal conditions in development and disease.

The President concluded his address with a fitting reference to the prominent names that have been associated with the art of obstetrics and gynæcology in Birmingham in the past, and to the present facilities which are afforded for carrying on the work. J. T. Ingleby was the first lecturer in Obstetrics at the Royal School of Medicine in the city, and he published several authoritative works on the subject. More recently the late John W. Taylor added to the knowledge of ectopic gestation.

The most powerful impetus to the subject of gynæcology in our time, however, was given by Lawson Tait, a man whose reputation spread far beyond the bounds of the locality in which he lived. Tait died in 1889. He was a man of conspicuous ability, bold in action, fearless in expression; a clever surgeon, quick in apprehension and fertile in resource; one whose versatility and energy stimulated enthusiasm and provoked emulation.

At the present day Birmingham is not without adequate means of carrying on in the best manner the special purpose of our profession. There is an admirable and well-administered Hospital for Women, a special department for women at the General Hospital and a similar one at the Queen's Hospital. Also, there is a Maternity Hospital, equipped with all modern requirements, to which is attached an outside lying-in department. Another very important arrangement has been made for the admission of cases of puerperal fever to the Hospital for Women on the recommendation of the Health Department. The hospital authorities have agreed to set aside a ward for septic cases containing two beds; thus the highest medical and nursing skill available will be obtained under the most favourable conditions.

Dr. PURSLOW proposed, and Dr. THOMAS WILSON seconded, a vote of thanks to the President for his address.

ROYAL SOCIETY OF MEDICINE.

Obstetrical and Gynæcological Section.

Meeting held Thursday, December 5 1912, *The President*, Dr. Amand Routh, *in the Chair.*

A short communication was read by Mrs. Willey, M.D., in a case of

Hydrocephalus Complicated by Eclampsia, Fibroids, and a Contraction Ring.

The patient, who was 37 years of age and a primigravida, was first seen in the seventh month of pregnancy, when slight œdema and albuminuria were present, but these symptoms disappeared under treatment. The fibroids were subperitoneal and situated near the fundus. Pregnancy went to term, but the membranes ruptured ten days before labour; the presentation was a footling. Six or seven hours after the onset of pains an eclamptic fit occurred, followed by two others at intervals of half an hour. The urine now contained a good deal of albumen. The legs, body and arms were delivered by traction, and it was then found that the descent of the head was arrested by a firm ring of contraction round the neck. Above the ring intermittent contractions could be felt in the body of the uterus; the cord had ceased to pulsate. A large mass could be felt in the uterine cavity, but whether this was a fibroid or the enlarged head could not be made out. The spinal canal was accordingly punctured in the lower dorsal region, and cerebro-spinal fluid flowed out freely. Traction was now steadily kept up, and in 20 minutes the contraction ring yielded and the head was delivered. Two more fits occurred after delivery. The temperature was over 100° for three days, and there was some jaundice, but in the end her recovery was satisfactory.

Dr. Clifford White read a paper on

The Contraction Ring as a Cause of Dystocia,

in which he contrasted the clinical picture given by these cases with those where a retraction ring forms as a result of obstructed labour. The chief points are: That with a contraction ring (1) the lower uterine segment is not thinned or over-distended; (2) the ring forms over a depression in the outline of the child or below the presenting part; (3) the general condition of the patient remains quite good; (4) the body of the uterus as a rule remains relaxed and not tender; (5) the presenting part is not forced down into the brim; (6) it may occur before rupture of the membranes.

The most important causes of the condition are: (1) Premature rupture of the membranes; (2) intrauterine manipulations; (3) malpresentations.

The treatment in severe cases is difficult. The slighter cases are best treated by manual dilatation of the ring with the fingers, but if these means fail it may be necessary to perform Cæsarean section, as forceps fail and embryotomy is usually very difficult. The reason why both these means fail is because the ring, being tightly round some depression in the child, will not let the child move except with the uterus, and thus traction by

forceps merely drags the uterus as a whole towards the vulva. If craniotomy is performed, cleidotomy must also be done to enable the shoulders to pass the ring, which is usually round the neck. A further difficulty in performing embryotomy is that the proportion of macerated children is high (10 per cent.), and so any portion of the child on which traction is made usually pulls off. If Cæsarean section is performed the incision will usually have to be continued downwards till the ring itself is divided before the child can be extracted. The most difficult cases to treat are those where the uterus is infected. (Statistics seem to show that infection of the uterine contents is frequent in these cases and may be a factor in its causation.) In these cases, if the child is alive Cæsarean section, followed by hysterectomy, is indicated. The extraperitoneal operations would not be possible owing to the length of the incision required. If the child is dead and the mother is infected it may be necessary to excise the gravid uterus, as the recorded cases show that the embryotomy is a particularly difficult one and attended by a high mortality. He reported three cases: the first was treated by embryotomy, which was very difficult, as the child was wholly above the ring and a placenta prævia prevented access. The mother died with a ruptured uterus. The second also had a placenta prævia but was delivered by craniotomy and cleidotomy. The ring was wholly below the child. The mother recovered. The third case was one with a transverse presentation with the ring firmly contracted round the prolapsed arm so that even the finger could not pass it. The child being dead, and the mother having had five other living children, and being infected, the case was treated by excising the gravid uterus unopened. The mother did well. The uterus, after hardening, shows the ring formed round the child's neck and constricting it. The ring is most marked where the fœtal parts allowed constriction—*e.g.*, the neck—and became less marked over points of greater resistance—*e.g.*, the arm. It thus shows the great importance of the fœtal outline in determining the existence and site of the ring. Measurements of the specimen show that there is no thinning of the lower uterine segment. Details of 18 cases treated by laparotomy were given.

The paper was discussed by the PRESIDENT, Dr. HANDFIELD-JONES, Dr. GRIFFITH, Dr. EDEN, Dr. WILLIAMSON, Dr. RUSSELL ANDREWS, Dr. WILLETT, Miss ALDRICH BLAKE, and Dr. EARDLEY HOLLAND.

GLASGOW OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.

Meeting held in the Glasgow Maternity and Women's Hospital on Wednesday December 11 1912, *the President*, Dr. LINDSAY, *in the Chair.*

Dr. LINDSAY showed a fresh specimen of an abortion sac which exhibited a marked disproportion between the size of the embryo and the containing sac.

Professor JARDINE gave a

PRACTICAL DEMONSTRATION ON THE MANAGEMENT OF DIFFICULT LABOUR,

showing the various manipulations on the phantom and exhibiting the several instruments required. He also showed specimens of fœtal abnormalities, and in particular a full-sized pregnant uterus with Bandl's ring and rupture of lower uterine segment removed post mortem. Dr. Jardine dealt first with occipito-posterior presentations, explaining the mechanism in cases which rotate normally. In non-rotated cases the method of inserting the hand and producing rotation to the front while the anterior shoulder is pushed round by the external hand was demonstrated, and also in cases where the shoulder could not be felt externally on account of obesity, the method of producing rotation by pushing two fingers of the hand in the vagina upward and completing the movement from the vagina. Face presentations were next demonstrated. Early flexion of the head by the hand—the finger over the occiput and the thumb on the forehead—was advocated. When a tumour of the neck exists the treatment is version. Version should be performed early. When the case has become malrotated with the chin backward the only method of delivery except in the case of small children is craniotomy, done through the orbit or mouth. The difficulties encountered in impacted breech cases where the membranes have ruptured and the uterus is moulded round the fœtus were explained. The upper uterine segment retracts, the lower segment becomes thinned out and the retraction ring grips the child round the chest or abdomen, the heels being above the ring. In these cases the patient is deeply anæsthetized and one foot is brought down; this is generally sufficient to relieve pressure and delivery can be effected by traction on the foot. In transverse cases early treatment by version must be done. If impaction has occurred, or where an arm is down, version, unless done by an expert, is dangerous and should not be attempted by a practitioner on account of the probability of rupture of the uterus occurring. In these cases the child is generally already dead, and decapitation must be performed. In performing decapitation Ramsbotham's hook may be pushed through the lower uterine segment. Dr. Jardine showed his modification of Braun's hook, which has a smaller curve and a sharp cutting edge. When an arm is down it may be necessary to cut through the chest from the upper side of the neck to the lower axilla. Bandl's ring as a cause of obstruction was discussed. Two cases were mentioned where the ring formed a distinct ledge in front of the presenting head. The treatment in these cases is Cæsarean section. Sometimes cases are met with where the ring is firmly contracted round the neck, the head of the child being free; early rupture of the membranes has taken place in these cases. Often embryotomy is necessary in dealing with this condition. The ring may form in the third stage of labour and cause retention of the placenta above it—so-called hour-glass contraction of the uterus.

Contracted pelvis was next considered. In these cases the question is not so much the diameter in actual inches; rather is it, Will the given head get through the particular pelvis? These cases should be diagnosed early and Cæsarean section arranged for when necessary. In some cases the anterior parietal presentation will come through, whereas in a pelvis of the same size a presenting head of similar size will not come through if the presentation is a posterior parietal one. It is important to diagnose these varieties of presentation as the forceps may be quite effectual in the

anterior, but delivery by the forceps impossible in the posterior. In anterior cases the forceps in its traction simulates nature's method, while in the posterior parietal presentation the instrument, by pulling down the anterior half of the head makes matters worse. In posterior presentations version should be done, and that early, or, if possible, the posterior presentation should be changed into an anterior one by manual manipulation, the posterior parietal bone being pushed up so as to allow the anterior to come down. Forceps may then effect delivery. The methods of performing craniotomy were described and the instrument demonstrated; the value of Prof. Jardine's instrument for crushing and extraction was pointed out.

A vote of thanks was proposed by the PRESIDENT for the clear and practical demonstration given, and Prof. JARDINE replied.

REVIEWS OF RECENT BOOKS.

"Die Syphilis in Lichte der modernen Forshung mit besonderen Berücksichtigung ihres Einflusses auf Geburtshülfe und Gynäkologie." By Dr. FRANZ WEBER, of the University of Munich. Berlin, S. Karger. Pp. 128, with 8 photo-micrographs. Price, 7 marks

THIS monograph is a concise and readable account of the present state of our knowledge of syphilis, with special reference to obstetrics and gynæcology. It is planned in the following sections: (1) Historical; (2) The Transmission of Syphilis to Animals; (3) The Spirochæta Pallida; (4) The Wassermann Reaction, including serum-diagnosis in general, the technique of the reaction and of its modifications, the specificity of the reaction and the relative value of the reaction in the different stages of Syphilis; (5) Syphilis in Gynæcology and Obstetrics; (6) Inherited Syphilis; (7) Treatment; and (8) A full list of references to literature.

In the historical section, which occupies the first twelve pages, the author follows the progress of our knowledge of venereal disease from the day that Moses, in the Book of Numbers, wrote of an "unreinen samenfluss," down to the latest publications of Ehrlich, and the other great investigators of the present century. He traces, in particular, the discoveries that gradually established the separation of "the venereal disease," for long looked upon as a single malady, into three distinct diseases.

The next fifty-eight pages are occupied by the general pathology of syphilis. The theory and technique of the Wassermann reaction are described in great detail; in his discussion on the specificity of the reaction, the author notes that certain observers have stated the reaction to be positive in eclamptic patients; he himself has investigated thirty-five cases, and in only one did he find complement-fixation, in all the others the reaction was negative; his results are amply confirmed by those of other workers, and it may be truthfully asserted that if an eclamptic patient gives a positive reaction the only justifiable conclusion is that she is syphilitic.

The sections devoted to syphilis in gynæcology and obstetrics, and to inherited syphilis, naturally interest us most. The author's remark that, whereas syphilis plays a very important rôle in obstetrics, its importance in gynæcological disease is much less, is amply supported by what he has written, for he has found two and a half pages sufficient for his account of syphilitic disease of the female genital organs. We confess our disappointment. The primary and early secondary affections of the external genitals are treated meagrely; we should have welcomed an account of primary lesions at uncommon sites, such as the cervix and vagina, and of that curious and uncommon ulcerative-hypertrophic condition of the vulva known as "esthiomène" or "lupus vulvæ"; the condition is merely mentioned with the advice that a Wassermann reaction should be tried and a search for spirochætes made. We miss a discussion of the well-known fact that syphilis in women is often such an extraordinarily mild disease.

Very little can be written about the syphilitic affections of the uterus, tubes and ovaries, for, as far as our present knowledge goes, the disease seldom attacks them. Syphilitic forms of endometritis and of metrorrhagia have been described, not because syphilitic changes have been found in the endometrium, but because the symptoms have yielded only to anti-syphilitic treatment. The thirty-six pages devoted to the influence of syphilis in obstetrics and to congenital syphilis well repay careful reading; the former is discussed under the headings of abortion, habitual abortion, the syphilitic fœtus, the placenta, the umbilical cord, the membranes and certain other conditions where the ætiology is not clear, viz., hydramnion, spontaneous rupture of the uterus and melæna neonatorum. Contrary to accepted views, the author believes that syphilis seldom causes abortion in the early months of pregnancy; in the fourth and fifth months also syphilis accounts for only a few cases, whereas from the seventh month onwards it accounts for the majority of cases of premature labour consequent on intra-uterine death of the fœtus. The Wassermann reaction and the discovery of the spirochæte in the organs of the fœtus have afforded precise methods for determining the ætiological factor. In a series of 300 cases of abortion Weber found no clinical evidence of syphilis; he tried the Wassermann reaction in 67, and divides them into two groups—(1) 35 cases in which abortion occurred before the 16th week of pregnancy; none of these gave a positive reaction, nor could the spirochæte be found in the embryo; (2) 32 cases in which abortion occurred in the 5th, 6th and early in the 7th month; 12 gave a positive reaction, and in 9 of these the spirochæte was found in the embryo. In a series of 33 cases of habitual abortion in the early weeks of pregnancy syphilis was proved in six only. On the other hand, Weber could find the spirochæte in the organs of 84 per cent. of macerated fœtuses born in the later months of pregnancy. In the placenta, from cases definitely syphilitic, the spirochæte is not always readily found. Trinchese, however, found spirochætes in the placenta in all cases where they were present in the organs of the fœtus, and his uniform success must be ascribed to the fact that in nearly every case he examined sections from more than 200 different places in the placenta. The spirochætes are usually found in the centre of the villi; they are also found in the intervillous maternal spaces, and have occasionally been seen in the epithelium of the villi. These facts seem to show that spirochætes can pass from the maternal to the fœtal blood-stream, and *vice versâ*. Weber has examined by the Wassermann reaction a limited number of cases of hydramnion, spontaneous rupture of the uterus, and melæna neonatorum; the results have not been constant, and do not point to syphilis as the etiological factor in any of these conditions.

In the section on inherited syphilis the mode of infection of the embryo is fully and ably discussed. The author believes that " without maternal, there is no fœtal syphilis." He does not accept the more commonly held view of direct paternal infection of the ovum, but believes in post-conceptional or placental infection of the ovum by the mother, who has herself become infected. Here again modern methods of diagnosis by means of the Wassermann reaction and the demonstration of spirochætes in the placenta and fœtal tissues, has been the means of elucidating the problem. The paternal infection theory stands and falls by Colles's law, and this is the crux of the problem. An apparently (*i.e.*, clinically) non-syphilitic mother can bear a syphilitic fœtus and is herself immune to

syphilis (there have, as is well known, been exceptions to Colles's law, in which the mother has acquired a primary chancre of the nipple from nursing her syphilitic infant—*Reviewer*). With modern methods at his service, the investigator has to decide whether such mothers are merely immune or are themselves the subjects of mild or "latent" syphilis. The fact that such mothers show a positive Wassermann reaction proves little, for the reaction, so far as we know at present (and we are as yet ignorant of the exact nature of the substance producing fixation of complement) may be due as much to the active virus of syphilis as to the immune substances which have passed from the fœtus to the mother. Weber has investigated a large number of these cases, and has proved his point by finding the spirochæte in the maternal part of the placenta in almost all cases where the mother gave a positive Wassermann reaction.

In the section on treatment, the author emphasizes the well-known fact that if in syphilitic women energetic treatment be commenced early in, and maintained throughout, pregnancy, the birth of a healthy infant may be confidently expected. The new-born child may be apparently healthy, and may only show symptoms of the disease months or even years after birth; therefore, it is of importance to test suspect new-born children for the Wassermann reaction in order that latent syphilis may be detected at once and proper treatment instituted.

The monograph concludes with a long list of references to literature, of which all but five are German. We wonder whether the Germans are the only nation who have investigated syphilis, or whether the author has not had the inclination to consider other nationalities.

We strongly recommend all who are interested in the subject to read this book. E. H.